

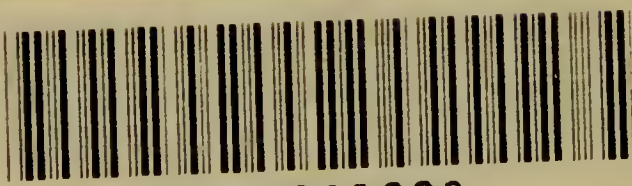
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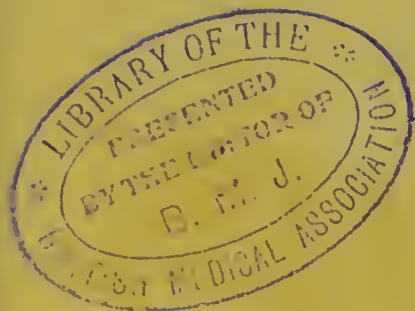
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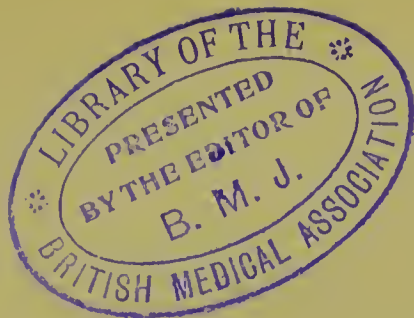
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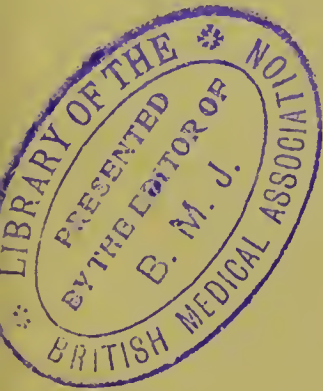
CANCER:

ILLUSTRATED BY ONE THOUSAND CASES FROM THE
REGISTERS OF THE MIDDLESEX HOSPITAL AND
BY FIFTY SELECTED CASES OF CANCER
OF THE BREAST, &c. &c.

BY

THOMAS WILLIAM NUNN, F.R.C.S.,

CONSULTING SURGEON TO THE MIDDLESEX HOSPITAL.



LONDON :

HENRY J. GLAISHER,

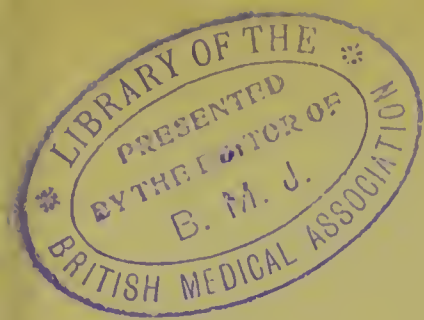
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P R E F A C E.

I HAVE re-arranged observations and facts previously published in an Essay on "Cancer of the Breast."

Drawings by Berjeau of histological sections prepared by Martin Cole have been reproduced by photography, as well as some made by the late Wishart Lyell.

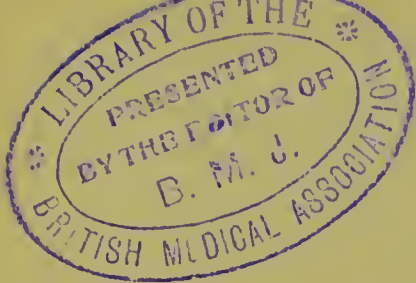
The reports of the in-patient cases and the *post-mortem* examinations are quoted from the Cancer Registers of the Middlesex Hospital. Details that had not essential bearing have, however, been omitted. The reports, it should be stated, were made by various Registrars and Pathologists holding office at different periods.

I have endeavoured to limit myself to the actual, and to avoid generalization.

T. W. N.



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CANCER.

STRUCTURE OF CANCER.

IN the category of tumours, cancer holds a numerical pre-eminence* and stands histologically alone.

On histological examination of a cancer we see three elements: 1, large cells, in juxtaposition, but not coherent, generally in groups; 2, much smaller cells—scattered; and 3, a fibrillary tissue, a matrix or stroma endowed with blood, lymph vessels, and nerve; the degree of vascularity, by the way, determining the tangible features of the particular tumour. (*Vide* Plate I., Figs. 1 & 2.) Compared with sarcoma, for example, although cancer has some outside appearances in common with sarcoma, in its life history there is this well-marked difference—the salient characteristic of sarcoma is an active, rapid growth, an unlimited reproduction of non-deciduous cells, a repetition of the same tissue elements. A sarcoma crumbles down by its sheer bulk, and from **extrinsic** causes undergoes inflammation and ulceration; the accidental occurrence of these processes alone curtails its exuberance.

* Roger Williams tabulated 15,481 primary tumours: 54·4 per cent. were cancers; 24·7 per cent. non-malignant tumours: 11·4 per cent. were cysts; 9·4 per cent. sarcomas.

Cancer, on the contrary, almost from its commencement, betrays *intrinsic* degeneration, and does not possess the capacity for building up those enormous tumours which are presented by varieties of sarcoma. Nevertheless, along the course of the lymphatics dissemination is common to both, and thus cancer and sarcoma reproduce themselves at a distance from the site of the primary outbreak.

Further, comparing the structure of cancer with lymph adenoma, we find in lymph-adenoma a repetition of one kind of corpuscular element only.

On Plate II. are given drawings to illustrate this difference in structure of cancer from that of a sarcoma and of a lymph-adenoma. Fig. 1 is a histological section of a sarcoma, and Fig. 2 of a lymph-adenoma. The sarcoma shows nothing but large uniform cells—the adenoma a countless repetition of lymphoid cells. The primary sarcomatous tumour in this instance was of the leg, but it infected the glands of the popliteal space, groin, abdomen, and thorax. The lymph-adenoma was limited to the axilla, from which it was successfully removed.

Now, these two forms of cells are found associated in cancer; the larger generally are arranged in alveoli or spaces, and walled about by the stroma. These alveolar spaces are labyrinthiform and not locular.

The large cells of a cancer are described as epithelial or epithelioid; the small cells as lymphoid or wandering cells. The relative abundance of these two forms of cells—of the epithelioid cells and of the lymphoid cells—varies; this is shown also in Plate I. Fig. 1 shows the

small cell element in overwhelming proportion, and Fig. 2 the large cell element almost exclusively evident.*

Their relative position is represented in Plate IV., Fig. 1. The larger cells are seen having some homogeneous cohesion, and to be separated from the smaller cells by the intervention of the stroma—the stratum of connective tissue. This Figure shows the large cells gathered in groups, held away by a fluid material from the wall of the alveolus, while the small cells, the corpuscles, permeate the stroma.

The large cells are sometimes not disposed in alveolar groups; this exceptional condition was described by Sir James Paget. Creighton refers to the fact. He remarks: †

“Among the many and great diversities which Sir J. Paget says may be observed in a collection of scirrhus tumours of the breast, we must include a certain diversity in the kind of alveolar grouping of the elements. One of the most common forms is that of solid masses of epithelium, three or four cells broad at their broadest part, tailing off into linear rows, and filling up pretty accurately the spaces in the connective tissue; sometimes these solid cords of epithelium become joined with one another by cross branches; sometimes the cells are ranged more in single file than in alveolar groups. Another not

* Roger Williams (“Diseases of the Breast, with special reference to Cancer,” 1894) gives a complete review of the various elementary constituents of cancer.

† “Infection of Connective Tissue in Scirrhus Cancer.”—*Journal of Anatomy and Physiology*.

infrequent form is that in which a number of epithelial cells lie loosely among fluid in a space of the connective tissue much too wide for them; sometimes the cells show a distinct tendency to range themselves in a more or less orderly fashion round the wall of the space."

This non-alveolar arrangement of the cells is shown in Plate VI., a drawing of a histological section of breast cancer, which, with curious accuracy, answers to Sir James Paget's observation.

There is a form of non-alveolar arrangement which I have seen—where, in a lymphatic gland from a case of scirrhus of the breast, the large cells formed a uniform mass, and, crowded together, were covered by a thick layer of lymphoid cells which was bounded by the fibrous envelope of the gland; thus there were three distinct layers—the large cells, the lymphoid cells, and the enveloping tissues.

Cancerous epithelial cells may, however, assume an arrangement to which has been given the name of **tubular cancer**, constituting an internal coating to the tubes or ducts, leaving a free lumen, and giving a deceptive appearance, on microscopic examination, of non-malignity. Against being thus misled it is necessary to be on guard in forming a diagnosis, or venturing on a prognosis.

The relation as regards position of the lymphoid cells to the epithelioid cells and the connective tissue, the stroma, as just mentioned, is remarkable, for the lymphoid cells would seem to be excluded from the alveoli, to be extra-mural. This is shown in Plate IV., Fig. 1, and in Plate V., Figs. 1 and 2, and in Plate VII., where they

are seen in linear series in the fibrillar tissue, but nowhere within the alveoli.

There is sometimes and under certain circumstances greater cohesion between the epithelioid cells—homogeneous cohesion—than between the cells and the walls of the alveoli, as already stated. This is illustrated in Plate IV., Fig. 1, a section from the upper part of a breast I removed, which had given to the touch the impression of being cystic; the epithelioid cells are seen gathered in the centre of the alveoli, being separated from the walls by colloid matter. Fig. 3 shows commencing aggregation, but Fig. 2, from the middle part of the breast, which was to the naked eye apparently unaffected, shows the epithelioid cells, aggressive, as it were, in buds, pushing their way through the interstices of the normal fibrillar basis of the organ.

LIFE HISTORY.

The career of a cancer includes the three cardinal and momentous epochs of birth, life, and death—the initial, the transient, and the final: the stages of development, of virulent energy, and of dissolution; the two latter being respectively the dynamical and the obsolete. The question naturally arises, wherein lies its cause of origin?

As to the first step of carcinomatous development, there are a multitude of advocates of such divergent opinions that there seems not to have been a uniform basis of argument.

Whether cancer commences as a purely local vice, or has behind it a constitutional ground-work, is a question that, even at present, can only be met by presumptive evidence. The theory that cancer is at first a purely local disease, differing from other tumours by having a certain structural peculiarity, namely, an absence of coherence in the cell-elements favouring its dissemination by a substantial transport of reproductive cells, is supported by admittedly insufficient data. Belonging to this theory is embryonism, which attributes the initial atom to the embryo; another idea, referring to even an earlier period, is the allegation that, since the epithelioid type of the cell growth is a predominant characteristic, the mischief takes origin from one of the primordial layers of the ovum: an allied theory is that the connective tissue corpuscles first undergo change. On the other hand stands the theory that cancer is caused by a constitutional condition; that this constitutional condition engenders in a given part a proneness inbred to undergo cancerous change, and hence the up-springing of the first speck of cancer. From this point there is a divergence of opinion as to the mode of dissemination; one idea implies the substantial transference of the reproductive cancer cells through the lymphatics and through the blood-vessels; the other idea implies the existence of a spermatic influence emanating from the primary focus.

I published in my essay on "Cancer of the Breast" a *précis* of the opinions of continental pathologists from 1864 to 1878 as follows:—

Cruveilhier, 1864; Robin and Littré, 1865; Foerster,

1865; Follin, 1865; Cornil, 1866; Uhle and Wagner, 1868; Cornil and Ranvier, 1869; Köester, 1869; Lücke, 1869; Gusserow, 1871; Maier, 1871; Waldeyer, 1872; Rindfleisch, 1873; Desprès, 1873; Wolfberg, 1874; von Nussbaum, 1875; Broca, 1876; Schulz, 1876; Bilot, 1878.

These opinions vary from the Biopathological to the Parasitic, and may be summarised as follows:—That the cancerous cells are affiliated to the normal secreting gland cell; that they are derived, from the epithelial basement membrane, from the connective tissue corpuscles, from endothelium of the lymphatic vessels; that they owe their origin to a blastema filtering through the walls of the capillaries; that the stroma is the essential constituent of carcinoma, its chambers communicating with the lymphatic vessels, and hence the lesions of the lymphatic glands; that an inflammatory hypertrophy may become an infective growth; that cancer is the result of a constitutional fault; that it is a purely local disease and is parasitic.

In this country we have Creighton as a supporter of the Biopathological view, and Plimmer as an exponent of the Parasitic.

Dr. Creighton argues that breast cancer begins as a transgression of a physiological activity, and infers that “Whatever is constitutional is developed from the primary tumour, after it has attained a certain maturity, and that the constitutional element is represented in the recurrence of secondary tumours.” He says, “It is superfluous, as far as I can see, to refer the whole cause of cancer to

a mysterious constitutional element as long as there are so many vicissitudes of the body, vicissitudes of cellular life, which may be a departure of cellular growth"—such as involution and evolution.

The theory of the spermatic or corruptive action of the first-developed cells was foreshadowed by Cruveilhier, in 1864, when he said the heteromorphic parasitic tissue had the property of assimilating and transforming into its own substance all the tissue which it invades.

But my object is not so much to discuss the theories regarding cancer—for it may be suspected that discussions of this kind have been carried on for the most part by a conjectural method of argument—as to report facts.

The following is a *précis* of a description of a mammary cancer, by Cornil* :—

Facts, to which no objection can be made, have given us the opportunity of deciding that mammary cancer very often begins by an excessive production and hypertrophy of cells in the lobules and glandular ducts at the same time that nuclei and cells spring up in the connective tissue which separates the acini of the gland. The acini, still enclosed by a layer of membrane, are filled by the over-exfoliation of epithelium, of a pavement or spheroidal form, while outside, in the connective tissue, large round or oval nuclei show themselves. These become in their turn cells, the proper tissue of the gland wall is absorbed, and an entire acinus ends in being nothing more than a mere meshwork of laminated tissue, the interstices filled

* "Du Cancer et de ses Caractères Anatomiques."

with cells originating at the same time in and around the terminal ducts. In other words, the modifications of this tissue end in the typical structure of cancer. In the milk tubes a corresponding increase of epithelium takes place; the tube space is filled and distended long before its resisting walls give way and are destroyed. And the result is that, in breast cancers which have been several months or a year in growing, the milk ducts are found choked with a fluid, composed of large cells, irregularly paved, often in a state of fatty degeneration, more or less consistent, and yellow.

In the central part of one of these tumours, where the disease commenced, the cells begin to undergo fatty degeneration, while the newly-formed cells near the circumference give to this part a certain degree of transparency. In sections of the opaque parts under the microscope all the cells are seen to be granular, and filled with granular fat. Thus cancerous tumours of the breast always show a certain opacity towards the centre, where there are also yellow patches, sometimes softened, *while the younger external semi-transparent tissue continues to increase by pushing out buds or spherical masses, which are sometimes adherent to the primitive tumour, and sometimes spread themselves out in an isolated fashion among the neighbouring tissues.* It is in studying these knots, or little secondary tumours, which rapidly follow the growth of a mammary scirrhus, that we learn the mode of origin of cancer in these tissues.

The researches of Mr. Stiles have developed and corroborated in a remarkable manner the nature of local

disseminations and their relation to the primary tumour and to the surrounding parts.

The theory that cancer is at first a local disease was held by Benjamin Bell, who, writing more than a hundred years since (1782), said : * “ We have elsewhere shown (‘ A Treatise on the Theory and Management of Ulcers ’) that cancer on its first appearance is, perhaps, in every instance, a local affection only ; that the cancerous diathesis is produced, not by any original affection in the constitution, but by absorption from a local ulcer.”

This theory having apparently been shown, by the subsequent universal experience of operators, to be open to serious question, has been again put forward as though it were a new one by pathologists who either overlooked or ignored Bell’s idea, or who, perhaps, considered that the fresh arguments they adduced justified their again urging its soundness.

The weighty and moderate opinion on this matter, expressed in the following quotation, is entitled to the most earnest attention.

Mr. Simon (now Sir John), speaking at Birmingham in 1877, said, “ Our present ætiological position seems, in short, to be this : In the genesis of the primary cancer we have evidence of two forces—one, the natural growth-power of the texture, the other a power which is at least relatively foreign ; and the cancer, which will act zymotically on other organs, expresses the co-operation of these two powers. Whether the process, as regards its

* “ A System of Surgery.” Fifth Edition. Dated 1782.

unknown factor, depends directly or indirectly on some contagion from the outer world, or is from first to last merely the abnormal play of forces native to the body, is a question which waits to be solved. In our present imperfect state of knowledge with regard to many of the requisite elements for judgment, it would, I think, be unwise to attribute impossibility to either of the alternatives. In relation to them both, as well as to other conceivable hypotheses of cancer, our scientific need and duty is to continue observing, as accurately as we can, every local and personal and hereditary condition which may seem to act, either attractively or repellingly, on the factor which it is our aim to understand; and of such indications there are already some which I think valuable. Thus, for instance, the fact that cancer has marked affinity for organs which are already in certain accidental ways disordered, seems to show that the unknown exciting cause either is not native to the body, or, at least, is not specially an attribute of the texture in which the disease breaks out. And the fact (as it appears to be) that cancer, though eminently contagious from part to part in the affected body, can hardly, if at all, be communicated to any other body, even among animals of the same sort, by artificial inoculations, injections, and transplantations, seems to say—first, that the unknown factor in cancer can only operate where certain general predisposing conditions exist; and, secondly, that cancer is perhaps not an hereditary disease, except as regards those predisposing conditions.”

The suggestion that there may be operative in the

genesis of cancer some contagion from the outer world will be, at the present date, especially appreciated.

Arduous workers in this direction have arrived at positive results. Dr. H. G. Plimmer stated lately at the Royal Society, "There are certain cancers in which there are intracellular bodies, of the kind described as parasitic Protozoa; these intracellular bodies can be isolated and cultivated outside the body; and such cultures, introduced into certain animals, can cause death, with the production of tumours of endothelial origin; and pure cultures from such growths will again produce similar tumours."

In respect of parasites, Williams wrote that "Before a disease can be called parasitic the parasite must be found, isolated, and the disease it is alleged to cause must be reproduced by its inoculation." At last his postulates have been satisfied by the work of Dr. Plimmer, artificial cancer has been produced; but whether the whole ground of the causation of cancer is covered by parasitic capabilities may remain to be proved.

Evidence is alleged to be afforded in favour of the purely local origin of cancer by the occurrence of cancer at seats of continuous irritation—chimney-sweep's cancer, for example. In respect of chimney-sweep's cancer, I may here say that I have never yet seen a case where the skin of the *whole body* was not more or less generally affected with small brown sessile warts. These warts are so very slightly elevated and lightly pigmented that they might easily be mistaken for freckles. Such growths must give rise to some relative mischief to health by

interference with the function of the skin. The co-existence of these warts with chimney-sweep's cancer, I believe, was originally pointed out by Sir James Paget.

It appears to me to be difficult to disassociate the phenomena of the disease from the idea of some constitutional fault.

In using the word "constitutional" I use it adjectively with the word condition, as expressing the difference between the condition of the individual before and after vaccination, although the zymosis produced by vaccination obviously commences locally.

The change produced in the organism by its having undergone the processes included in such diseases as scarlet fever or small-pox, for example, by which an immunity from the morbid action of the same poison which produced the disease in the first instance is secured, must be assumed to be a constitutional change. Ovulation is a local process, but has a constitutional basis—that of age. A reverse of protection may hold good, permitting the development of cancerous change.

If, for the sake of argument, it were to be admitted that cancer is in its origin a purely local disease, I doubt whether the position would be strengthened by the assertion that cancer of one breast is rarely followed by cancer of the opposite organ, since it has been found in 19 per cent. in 89 post-mortems; or by the allegation that when hereditary it is inherited as a local peculiarity—the disease showing itself in the descendant in the organ corresponding to that affected in the parent; for in my own experience of fifteen instances of cancer of the breast where

the mother of the patient had suffered from cancer, the maternal cancerousness was of the uterus in 7; of the breast in 3; of the eye in 1; of the tongue in 1; of the throat in 1; of the finger in 1; and of the face in 1. The hereditariness in these cases was not regional, and *pro tanto* contradicts the assumption above mentioned.

DYNAMICAL STAGE.—REACTION OF THE CANCEROUS PROCESS.

The dynamical stage of cancer tissue declares itself by two processes; first, in the extension of the mischief at the seat of the primary disease; and secondly by the infection of tissues and organs at a distance.

All important is the dynamical question, when does the primary (initial) particle become corruptive? When does it enter into an adult existence of reproductive capability? What is the relation of degeneration to corruptiveness? Has local decay a share in the distant infection?

There is an example of the dynamical epoch of cell life to be seen in the growth of what are called "venereal" warts. These epithelial excrescences (which are not syphilitic, it is to be said) do not spring up until an acutely inflammatory stage of a urethritis has passed away, and when the discharge is at a minimum.

I long since suggested (at a meeting of the Pathological Society) that these warts take origin from the

transplantation of urethral epithelium on to the mucocutaneous surface of the prepuce or glans, and were due to the growth and multiplication of such transplanted epithelial cells. These cells resemble the corpuscles of molluscum contagiosum in being inoculable, but elect a different class of follicles for their development.

I may here interpolate an experiment I made in the opposite direction, that of grafting healthy on to cancerous tissue. I had under my care in the Middlesex Hospital a patient with cancer of the breast; the skin over the breast presented from time to time tubercles, the size of a split pea. These tubercles remained for a period uninflamed and quiescent, then ultimately ulcerating one by one. A newly-formed tubercle was chosen, an incision being made across it; a healthy skin graft was placed therein. The graft lived until the necrosis (as with the other tubercles) supervened, and it was cast off. As far as this isolated experiment went, it showed that the graft imported no beneficial influence as regarded the life of the tubercle, neither did the state of the tubercle, while uninflamed, interfere with the vitality of the graft.

Infection may not be solely by one road, and by the transplantation or the migration of reproductive cells or particles along blood-vessels, lymphatic vessels, or by intrusion into the lymph spaces. Mr. Butlin, referring to the extension of disease in carcinoma of the breast, associated with eczema of the nipple, says the disease travels along the large ducts and reaches the smaller ducts and acini, which become dilated and filled with proliferating epithelium, an accumulation afterwards dis-

charged into the surrounding tissues. This progress from the nipple to the gland structure would imply some intangible reflex influence.

There is a very important contribution in Vol. XXXIII., Path. Soc. Trans.; by Dr. Sharkey, with illustrations, showing in a case of cancer of the kidney proliferation of the lining epithelium of the Malpighian capsules and the urinary tubes, and displaying the earliest steps in the development of the new growth and the origin of carcinoma from epithelial cells of the urinary tube.

Examining the reaction of cancer on the neighbouring tissues, we see the small cell-element, one may say, ubiquitous and often taking a prominent part.

Plate IX., Fig. 1, shows the invasion of the muscular tissue by the corpuscular element. These lymphoid cells are seen everywhere between the muscular fibres, outside the sarcolemma, the transverse striæ of the muscular tissue being almost obliterated. This condition of the sarcous elements, of course, indicates degeneration; and a similar invasion of the connective tissue in ordinary adipose tissue is shown in Fig. 2.

In sections of the skin in cases where there is consolidation, invasion by the lymphoid cells is seen to be universally distributed; vide Case XXII. In a section of an epithelioma of the lip, the same universal infiltration of the fatty, muscular, follicular, and glandular tissues was everywhere obvious.

To refer again to Plate IV., in Fig. 2, these corpuscles would seem to be less intrusive where the epithelioid cells

are pushing their way into a portion of a breast which to the naked eye appeared unaffected.

It may be that these lymph corpuscles are generated where they are found, and are not there by infiltration or intrusion. The Drs. Hoggan say these cells are derived from the blood-vessels, attracted as it were through the walls by the stimulus to such movement as is given by the cancerous process going on in their immediate neighbourhood.

What the share is of the epithelioid and the lymphoid cells respectively in the contamination is a problem that will possibly be solved by further experiments in a bacteriological direction.

The Drs. Hoggan* describe the infection of cancer through the lymphatic system. They differ from Koester mainly in denying the participation of the endothelial cells of the lymphatics themselves. They say that the cells of the lymphatic wall ultimately become infected by the cancer cells, but are not the primary agents of cancer dissemination; but that cancerous cells of the lymphatic wall infect the wandering cells on the other side of the wall, and thus become the focus of the secondary tumour. They add that cancerous lymphoid or wandering cells infect the cells of the fixed tissues; that nuclei of the fixed cells alone undergo the cancerous change; and that the nucleus of the cell becomes the new cancer cell.

Dr. Dickinson described (Trans. Path. Soc., Vol. XIV.) a case of acute and wide dissemination following cancer

* Archives de Physiologie. Paris.

of the glans penis. The body of the patient (æt. 70) was covered with hemispherical prominences, occupying the sub-cutaneous areolar tissue. There was disease of the absorbent glands. There were nodules on the heart; in the liver, in the spleen; the glands of the mesentery and great omentum were infiltrated with the same deposit; nodules on the outside of the bladder and on the capsule of the kidney. Dr. Dickinson's paper contains some important remarks as to the course of infection along the absorbents, and on the nature of the infective material and actual mode of propagation.

The axillary glands when infected for the most part exhibit the same alveolar arrangement of the epithelioid cells with surrounding lymphoid cells as is to be observed in the primary tumour. Plate III., Fig. 1, represents a section of an infected axillary gland; and Fig. 2, section of a recurrent nodule after an operation some years previously for removal of the breast. Plate VII. is of an infected axillary gland where the lymphoid cells invade the matrix in linear series.

The changes that take place in the blood-vessels have been described by M. Cornil. He says the vessels are dilated at the whole of their circumference, or at a part of their parietes.

The Drs. Hoggan say that the blood-vessels become dilated and lose their contractile property in cancerous infection of the skin.

The development of blood-vessels may reach to such an extent as to hide the essential nature of the disease. Malignant tumours are seen in which vascular tufts

constitute their chief mass, as, for example, in some outgrowths from the bladder.

Let us take cancer of the breast as an example of the progress of the disease, and consider it in its immediately local and in its general aspects. There are two complications near at hand: (*a*) the contamination of the axillary glands, involving interference with the circulation of the upper extremity, and implication of its lymphatic system producing solid œdema, too often excessively painful, and otherwise distressing from the weight and immobility of the limb; and (*b*) the direct extension of mischief to the thoracic cavity.

Then are to be noted the secondary developments in distant organs. The post-mortem examinations of 123 cases of cancer of the breast revealed that implication of the thoracic cavity and lungs was nearly invariable; while, as regards the abdomen, the liver was the seat of secondary deposit in 89, the ovaries in 8, the uterus in 4, the brain and bones of the head in 9 cases.

There is an article in *The Lancet*, March 23, 1889, by Stephen Paget, on "The Distribution of Secondary Growths in Cancer of the Breast," which deals with metastasis in malignant disease, and especially refers to the coincidence of fibroids of the uterus. Mr. Paget says, "It appears that fibroid tumours of the uterus are found with special frequency in women who die of cancer of the breast." The whole article will repay a careful study.

I may here add that in 123 post-mortems of patients dying of breast-cancer, tabulated by myself, 27 had uterine fibroids.

Secondary manifestations are, as it were, ear-marked. *Qualis ab incepto*. The secondary "deposit" is the repetition of the structure of the primary outbreak—that is to say, a bone cancer of the leg is a bone cancer in the liver or lung as a secondary manifestation. Melanosis of the hand will in all probability be followed by melanotic disease in the lung; and, *vide* Case XVI. for example, where bloodcyst near the cicatrix after amputation of the breast was followed by hæmorrhagic cystic disease in the axilla and in the lung.

Secondary affection of the cerebro-spinal and sympathetic systems and the envelopes is not common, but it appears to me to be comparatively more frequent in the classes where the nervous system is the most highly developed; that is to say, I have seen the greater number of cases amongst other than hospital patients. When the disease is in the brain the symptoms are more tangible than when the cord is affected, the locality of the secondary tumour being indicated by defined interference with the function of a cranial nerve, or some lobe of the encephalon. In cases I have assumed to be of secondary affection of the spinal cord or its membranes, neuralgia, continuous or intermittent, is the most prominent symptom, with inability to stand or get out of bed unassisted, obstinate pains in the hips and loins, pains becoming more continuous and severe, intense pain at various parts of the body on pressure, and twitching of the limbs without pain. The access of spinal mischief is insidious, and the ultimate development of the neuralgia constitutes one of the most serious complications with which we have to deal, the

cases being often complicated with disease in the vertebræ and absorption of the intervertebral fibro-cartilages. The spinal pains may commence in the cervical region, and extend to the branches of the brachial plexus, one or more fingers being especially neuralgic; the pain is sometimes compared by the patient to that caused by the application of a hot wire. These pains are dissimilar to the neuralgia which arises from implication of the intercosto-humeral nerves in the cicatrix after amputation of the breast. The pains are in the track of nerves having no direct anatomical relation with the parts that may have been submitted to operation.

A patient was placed under my care by a friend, who wrote to me saying that there was a lump in the right breast, but it was important I should know that there had been a similar lump on the opposite side (a lump considerable and very scirrroid), which disappeared under treatment, and of which not a trace remained. He also drew my attention to the fact that the patient *was complaining of various quasi-rheumatic pains*, and advised a recurrence to the treatment, viz., pressure by careful strapping, which in the first instance had acted singularly well on the tumour of the left breast. I was unable to carry out this indication as the patient left town for Brighton, where she died some months afterwards with symptoms of cancer of the spinal cord. There can be but little doubt that the quasi-rheumatic pains were really due to the commencement of spinal mischief, and that the case was an example of metastatic attack of the cerebro-spinal system. Again, a case came under my

notice where, judging from ocular symptoms, the superior cervical ganglion of the sympathetic was involved. The breast had been removed by operation some two years previously.

Now, whether the cancer in the nervous system is a true metastasis, or a fresh starting-point, or is due to a migration of germs, are questions the answers to which depend in some measure on the history of the case. Cases have occurred within my knowledge where the patient, several years after removal of a cancerous breast by operation, succumbed to spinal mischief.

Mr. Roger Williams ("Morphology of Uterine Cancer") has discussed the subject of glandular and general dissemination in cancer of the uterus, and contrasted the comparative rarity with the frequency of these phenomena in cancer of the breast. It has to be borne in mind that in cancer of the uterus the local destruction of tissue and invasion of the adjoining organs is more progressive and unsparing, and more quickly exhausts the patient.

Cachexia is not an essential element in the cancerous process, but the outcome of exhaustive pain and irritation and septic absorption. There is in some instances the opposite of cachexia, namely, a marked gain in weight, as mentioned in the Cases No. XIII. (acute) and No. XXI. (chronic). In this latter case the body weight increased 2st. 2lb, between the dates of January, 1876, and September, 1879. In another case, not of a hospital patient, with cancer of the breast, the weight of 8st. 3lbs. in March, 1896, gradually increased to 9st. 11lbs. in December, 1897, but afterwards

decreased to 8st. 4lbs. in May, 1898 ; the ulceration having considerably spread. The patient died early in 1899 from abdominal complication (no post-mortem) in the fifth year after the discovery of the disease. (This patient was known to Dr. Fountaine, of Camden Road.)

There are some cases of cancer that may be properly described as cancer of the lymphatic system, the glands, the vessels, or the spaces, independent of a primary carcinomatous process in any other tissue.

The characteristic of this form is the rapid spreading of the mischief and wide infiltration. Even when the *primary* cancer is elsewhere than in the lymphatic system, this system may become especially implicated. In carcinoma mammæ, under such circumstances, the arm of the affected side is swollen with a brawny œdema, and the pleural sac suddenly fills with serous effusion, the patient quickly dying, cyanosed. Generally lymphatic cancer runs its course swiftly, and the patient succumbs in less than twelve months. It occasionally supervenes suddenly in chronic cases of breast cancer, the lymphatics becoming extensively obstructed, pleural effusion following.

At first sight the œdema of the arm might be supposed to be due to pressure on the veins of the axillary space ; but these veins may be seen completely enveloped in a cancerous mass and yet the arm may not be swollen ; moreover, the œdema is not to be reduced by puncture or drainage.

Sir James Paget wrote, "As a primary disease cancer of the lymphatic glands is rare. . . . Cases sometimes

occur in which the disease in the glands may be so nearly coincident with that in the organ to which they are related that we may believe the gland cancer to be primary, though not alone."

The final—the obsolete—stage is that where the morbid protoplasm undergoes fatty degeneration, molecular necrosis. The fatty metamorphosis of the protoplasmic contents of a cell is essentially a sign of weakness or death, and represents decomposition of effective material. Thus it has happened that so many attempts to inoculate cancer have failed since something obsolete was employed instead of the real virulent principle—that the husks had been sown in place of the grain.

Molecular necrosis, represented by retrogression of the cell protoplasm by fatty metamorphosis, is sometimes overridden by necrosis in bulk—by gangrene in the mass. In a case under my care in the Middlesex Hospital, the lower half of a cancer of the breast underwent mortification, and was thrown off as a slough, leaving a surface which presently assumed the appearance of a healthy granulating and cicatrising sore. The remaining half, after a time, became also gangrenous, and exhibited a black, irregular, shreddy, overhanging margin, in striking contrast with the lower semi-disc of cicatrising granulations. A drawing of this condition is published in the essay before referred to.

The want of cohesion of the large epithelioid cells is probably due to the degenerative process. In reference to this slight coherence of the epithelioid cells, Mr. Henry Arnott wrote, "It seems wonderful that a

scirrhous carcinoma should ever be satisfactorily removed by operation, its cells having so very slight cohesion compared with that of the elements of most other new growths." I would suggest that the non-coherent cells being obsolete can do no harm.

Mr. Marmaduke Sheild gives a drawing of a dimple in the skin over early carcinoma of the breast. This illustrates the atrophic change going on in the deeper parts. It will generally be found in consequence of such atrophic contraction that the affected breast is on a level higher than the opposite one; that is, the horizontal diameter will range above the same line on the opposite side; and that a line drawn from the nipple of the sound breast to the nipple of the affected breast will slant upwards. This slanting upwards on the side under suspicion is more reliable as a diagnostic sign than retraction of the nipple, and, as Mr. Sheild observes, "many other conditions besides contracting carcinoma may pucker the nipple."

There is one point I wish to mention, viz., that there are some cases where small outlying particles of glandular structure become the seat of primary cancer, and by the touch cannot be distinguished from ordinary adenoma. I regard the *peripheral* situation of a small shotty tumour as justifying at least suspicion.

After all, what is the difference between cancer germs content with a local career, and cancer germs of the propagandist order? What are the conditions that render cancer germs stationary, living their life, and undergoing retrograde changes, without travelling to distant parts of

the body and there proliferating? Is non-contamination due to resistance of parts or tissues exposed to contaminating influences, or to some local intrinsic change in the cancer material destroying its power of contamination?

I have not attempted to enter into the question of operative treatment. That matter was fairly discussed at the Royal Medico-Chirurgical Society's meetings on January 25th, February 8th and 22nd, 1898, on the reading of Marmaduke Sheild's paper on "Immunity and latency after operations for cancer of the breast," and subsequently on Mr. Dent's paper on the same subject. I would, however, offer this observation as to the results of oöphorectomy for the arrest of cancer. The temporary withering of the cancer in some instances after that operation points to a constitutional element in the phenomenon and appears to me to be paralleled by the extraordinary improvement in the patient's condition that has been seen occasionally to follow abdominal section when an unexpectedly irremovable diseased tumour has been encountered.

As regards Cancer of the Breast, the operation for removal is not a dangerous one, and common sense dictates the clean removal of a mass invaded by a disease that will in its ordinary course sooner or later decay, and in a noxious manner with venomous complications, whether the invasion be originally due to some constitutional condition to purely local wrong-going, or to the result of a parasite. In respect of uterine cancer and hysterectomy, and operations on the cervix, Bland Sutton informs me that in cancer of the body of the uterus the results are highly

satisfactory, but the reverse is met with in dealing with the disease in the cervix.

One word as to prognosis.

It is very unsafe to predict the duration of life in Cancer, and prognosis should be, if possible, withheld. It so often happens that pressure is put on the medical man by the relations of the patient "for family reasons," and those family reasons may be of such urgency that it requires considerable firmness on the part of the surgeon to refuse an opinion. I have come across so many instances of the mischievousness of the prognosis that was not justified by subsequent events, that I do not hesitate to insist on this caution. To emphasize: although it is an extreme example of an occurrence against expectation, I would refer to the remarkable case recorded by Pearce Gould* of spontaneous disappearance of secondary cancerous growths. A single woman in 1888 noticed a small lump in the left breast, having received a blow there in 1885. She was operated on in 1890 and in 1892 for enlarged axillary glands; again in 1894, the right breast being also affected; was admitted into the Middlesex Hospital, January, 1895, with multiple recurrences and dyspnœa, mischief in the left great trochanter, and other threatening symptoms.

In 1896 general improvement commenced, which steadily progressed, and she was presented at the meeting of the Society, Nov., 1896. This patient is still living and in a satisfactory condition, and was shown by Mr. Gould at

* Vol. XXX., Clinical Soc. Transactions.

the Clinical Society's meeting in the Spring of this year, 1899.

REGIONAL FREQUENCY.

In the history of cancer one of the most striking facts, and one having, it may be, an important ætiological bearing, is the unequal manner in which cancer attacks the various parts of the body.

We see that the female reproductive organs, the uterus, and the breast are particularly liable to the disease; for of 1000 consecutive cases in the cancer wards of the Middlesex Hospital, and of 266 cases of the out-patient cancer department (1266 in all), 436 were of the uterus and 417 of the breast, making a total of 853, or more than two-thirds of the entire number. Of the remaining 413 cases, there were: of the head, face, mouth, and lip, 122; tongue, 77; rectum, 45; bones, 29; male genitals, 28; lymphatic glands, 25; leg and foot, 20; pudenda and bladder, 18; eye and orbit, 12; pharynx and larynx, 10; skin and cicatrices, 8; arms and hands, 7; abdomen, 5; nose, 2; brain and nerves, 1; thorax, 1; sternum, 1; groin, 1; ovary, 1.

Thus, of a thousand cases in the cancer wards, cancer of the uterus stood at 38·9 per cent.; of the breast, 26 per cent.; of the stomach, less than 1 per cent. But of 1,155 cases of cancer occurring in the special and the medical wards together, 32 were of the stomach, showing a percentage of 2·77 (noted during the years 1867 to 1875 inclusive).

Sibley's statistics relating to 520 cases, of which 156 were of the uterus and 192 of the breast, published in 1859, give for cancer of the stomach the same percentage as that arrived at by myself from data commencing eight years later, namely, 2·77.

This is mentioned especially, as these figures do not agree with statistics of cancer published on the Continent. The discrepancy between the statistics of the foreign hospitals and our own may partly arise from the fact that the French hospitals include some that are asylums for the aged, and correspond more with our poor-house infirmaries. At the same time difference of race may have an influence in determining the seat of attack.

M. Salle ("Etiologie de la Carcinose," 1877) makes the statement that out of 1,358 cases, from Paris records, 28·84 per cent. was the proportion of cancer of the stomach, while the proportion of uterine cancer was given as 32·24 per cent.

M. Marc d'Espine, speaking of the canton of Geneva, states that in 889 cases of cancer 45 per cent. were of the stomach, 15 per cent. of the uterus, and 8·5 per cent. of the breast. But, further, M. Salle, in his "Thèse sur la Carcinose," places the stomach at the head of the list, and quotes the tables of Marc d'Espine and of Virchow, who put the stomach at 54·9, the uterus at 18·5, and the breast at 4·3 per cent. He says that the relative frequency in the different organs in the cases observed by M. d'Espine and those gathered from the hospitals of Paris is the same; that the order of frequency stands thus:—stomach, uterus, liver, breast,

rectum, mouth, male genital organs. MM. Cornil and Ranvier place the stomach at the head of their list ("Manuel d'Histologie"), but they give no statistics.

AGE.

The age of greatest liability or vulnerability to cancer has an allied and parallel position in the history of cancer to the relative degree of liability ruling in the various parts of the body, or of regional liability. No age is exempt from cancer. But the liability varies according to the age. The average age of liability is different for the different organs and for the sexes.

From the consecutive records of 1,000 cases, the average age for cancer of the uterus was 45·7 years, for cancer of the breast 49·8, for general cases, the large majority (more than two to one) being of males, the average age was 53·7 years; Sibley's averages for uterus and breast being respectively 43·28 and 48·6 years. These averages serve to point to the circumstance that cancer develops in the uterus earlier than in the breast, and in the breast earlier than in other parts taken collectively. The average age of attack of 160 cases of cancer of the breast observed by myself was 50·4.

To specialize by giving the age-liability of a single organ, the breast. The following table, compiled for me by a professional actuary, will show in quinquennial groups the liability of each period. The analysis into quinquennial groups, giving the relative liability of each age, is displayed in column 5.

AGE.	COL. 1. Number of cases observed.	COL. 2. Percentage of total cases.	COL. 3. Mean No. of persons living in quinquennial groups, starting with 100 living at 25-29 (Dr. Farr's English Life Table).	COL. 4. The figures in Col. 2 taken as a percent- age upon those opposite them in Col. 3 become	COL. 5. The figures in Col. 4 reduced to a percentage of 100 cases (showing relative liability at each period of life).
25-29	2	1.25	100.	1.25	.831
30-34	9	5.625	95.035	5.919	3.933
35-39	19	11.875	89.831	13.219	8.783
40-44	25	15.625	84.326	18.529	12.311
45-49	34	21.25	78.409	27.101	18.006
50-54	28	17.5	71.947	24.323	16.161
55-59	13	8.125	64.513	12.594	8.368
60-64	13	8.125	55.679	14.593	9.696
65-69	10	6.25	45.232	13.818	9.181
70-74	4	2.5	33.331	7.501	4.983
75-79	2	1.25	21.168	5.905	3.923
80-84	1	.625	10.861	5.755	3.824
	160	100.000	100.000

This would tend to indicate that the liability to mammary cancer at the age 45-49 is more than double that at the age 35-39; at the age 70-74 it is about six times that at the age 25-29; at the age 55-59 about ten times that at the age 25-29, and so on.

Birkett gives 42·16 per cent. of breast cancer, and Bryant 36 per cent., between the fortieth and fiftieth year; my own cases (two quinquennial groups taken together), in column 2 of the table, give 36·87 per cent., but in column 5, showing the relative liability at each period of life for the same decade, 30·3 per cent.

GEOGRAPHICAL DISTRIBUTION—PLACES OF BIRTH.

I have endeavoured to show that, as far as my statistics go, certain parts of the body are specially prone to develop cancer, and that certain periods in the life of a human being have a greater susceptibility to the disease. A matter of great moment, demanding consideration, follows, namely, the question of geographical distribution of cancer, as having weighty bearing on the problem of the origin of the disease.

Here are tabulated the places of **Birth** of 1,030 in-patients, subjects of cancer, from the records of the Hospital; and, though the results cannot be adduced as decisive evidence, yet, when collated with the returns of the Registrar-General as to the places of **Death**, they support the allegation that cancer declares itself in excess

in certain districts in comparison with other districts, and that to be born and bred in some localities enhances the chance of being the subject of cancerous disease.

This analysis as regards the place of **Birth** of 1,030 consecutive cancer patients, admitted into the Middlesex Hospital, demonstrates the fact that the majority were born in the South-Eastern division of England. The detailed results of the analysis of this record of place of birth are as follows :—

335 were born in London.

588 in the various counties of England (as below specified).

20 in Wales.

13 in Scotland.

53 in Ireland (19 being from County Cork).

21 abroad and at sea (1 in Canada, 2 in Jamaica, 1 in Calcutta, 1 in Malta, 1 in the Isle of Ascension, 1 in France, 1 in Belgium, 2 in "Germany," 1 in Bavaria, 1 in Mecklenburg, 1 in Holland, 3 in America, 5 at sea).

London	335	Norfolk	23
Kent	62	Suffolk	23
Essex	45	Devon	22
Sussex	42	Buckinghamshire ..	20
Berkshire	37	Wiltshire	20
Hampshire	30	Somersetshire	20
Hertfordshire ..	25	Surrey	19
Middlesex (away from London).	24	Oxfordshire	16
		Dorsetshire	14

PLACES OF BIRTH—*Continued.*

Northamptonshire ..	13	Cumberland	4
Cornwall	12	Cheshire	4
Bedfordshire	12	Derbyshire	4
Yorkshire	12	Shropshire	4
Lincolnshire	11	Staffordshire	4
Cambridgeshire	11	Herefordshire	4
Warwickshire	11	Leicestershire	3
Lancashire	10	Worcestershire	3
Nottinghamshire ..	8	Huntingdonshire ..	2
Durham	7	Westmoreland	1
Northumberland	5	Rutland	1

An analysis made some years since of the returns of the Registrar-General showed a death-rate from cancer to be so largely in excess in certain districts that the mortality from this disease was about double in the South-Eastern division of England as compared with that of the North-Western division—that is to say, that the death-rate from cancer was one in every thirty deaths in the South-Eastern division, whereas in the North-Western the rate was one in fifty-nine.

Such statistics have more recently been exhaustively dealt with by Roger Williams, in a work having special reference to cancer. The inequality of geographical distribution is a reality.

Dr. E. N. Nason, a member of a committee formed to investigate the influence of locality in some Midland counties, has been so good as to place the conclusions at which he has arrived, by the study of this question, at my disposal.

These are :—

1. The mortality from cancer varies in different districts between very wide limits; that of some districts being as much as ten times that of some others.

2. Districts with a high mortality and districts with a low mortality often lie side by side.

3. Districts with a high mortality have almost invariably an ill-drained subsoil, either due to insufficient natural fall, proximity to sluggish streams, or to the presence of some impervious material (*e.g.*, clay) immediately beneath the subsoil.

4. It seems not improbable that the presence of large quantities of decaying vegetable matter may have some influence in the same direction.

5. Districts with a low mortality have almost invariably a well-drained subsoil, due either to a good natural fall for drainage, such as occurs on the slope of a hill, or to the presence of some pervious material (*e.g.*, sand, chalk, &c.) beneath the immediate subsoil.

6. These conclusions would suggest that it is inadvisable for persons who have shown evidence of cancer, or who are known to have an inherited proclivity to cancer, to reside in a district where the subsoil is ill-drained or damp.

7. There seems to be evidence that cases of cancer occur in some houses, or groups of houses, more frequently than can be accounted for by mere coincidence.

8. There is no evidence that heredity stands in any

other relation to cancer than it does to tubercle. In both cases there is probably an inherited susceptibility.

9. The facts brought out by the study of the local distribution of cancer strongly support the view that cancer is due to a parasitic protozoon.

10. Our hopes of curing cancer lie in our obtaining more accurate knowledge of the life-history, habitat, and mode of entrance of this parasite.

HEREDITY, LACTATION, PHTHISIS, LONGEVITY.

Touching the question of heredity. Of 1,000 in-patient cases, generally from the registers of Middlesex Hospital, about 16 per cent. gave information as to the existence of cancer in their families.

6 Fathers.	5 Paternal Uncles.
43 Mothers.	2 Maternal Uncles.
4 Brothers.	18 Paternal Aunts.
30 Sisters.	25 Maternal Aunts.

While in 160 cases of cancer of the breast in the out-patients observed by myself cancer was traced among the relations in 47 cases, or 29·3 per cent. :—

15 Mothers.	9 Cousins.
1 Father.	1 Maternal Uncle.
5 Grandmothers.	5 Maternal Aunts.
4 Brothers.	4 Paternal Aunts.
2 Sisters.	1 Paternal Great Aunt.

In comparing my cases with those recorded in hospital registers the proportion of mothers affected is more than double, as 43 cancerous mothers only were met with in the 1000 in-patient cases; whereas, if the proportion recorded as above by myself obtained, 93 would have been found. Sibley stated that of a total number of 305 cases cancer was traced in the families of 34. Cancer therefore was traced by him in 11.1 per cent.

As an example from many family histories within my knowledge, of prevalence of cancer in certain families, I give the following, which I learnt from a private patient (under treatment for perforating ulcer of the septum of the nose). He informed me that his mother died of cancer of the breast, aged 50; a maternal aunt died of cancer of the breast, aged 63; a second maternal aunt died of cancer of the breast, aged 69, both unmarried. One maternal aunt had tumour of the womb, nature unknown; died, aged 55. The maternal grandfather died, aged 63; while the maternal grandmother lived to the age of 80.

On this point Sheild says if one member of a family has suffered it goes for little in proving heredity; if several members have suffered, and perhaps for several generations, it goes for a good deal; and, in treating of this question, mothers and sisters only ought to be considered.

As regards the breast, it has been alleged that the dereliction of lactation is one of the causes of cancer. It might be suggested that, on the other hand, prolonged lactation would predispose to the development of the disease. Distinctly one of the causes of mastitis is too prolonged lactation. I have seen cancer of the breast

where the patient had always nursed her children during ten and eleven months.

Phthisis, out of 160 cases, was traced in relatives in 36 cases. This is somewhat less than the frequency noticed by Sibley.

Longevity in the families of patients with cancer of the breast is of frequent occurrence. Out of 169 cases of patients observed by myself the average age of the fathers was 62·35, the average of the mothers 61·53; 106 patients had grandparents who had lived to be more than 70 years old; 62 had parents who had lived to be more than 80 years old; 15 had grandparents known to have lived over 90 years. [Of the grandparents of the 169 patients (who would number 676) 133 lived to be over 70 years of age, 89 were reported as simply old, 38 died between 40 and 70, and 42 died young—that is to say, under 40 years of age. Concerning the remainder, the facts were unascertained, it frequently happening that the patients were unable to give any details respecting their relatives.]

CASES.

I here give clinical reports of a number of cases of cancer of the breast. Probably a better opportunity of studying the progress of the disease is afforded when it attacks the breast than when seated in any other organ, as—for a time, at least—no vital function is deranged, and the cancer process is, so to speak, immediately under the observer's eye. The duration of these cases varies from twelve months to more than that number of years.*

CASE I.

Intensely acute cancer of right Breast—Sloughing of centre of mass—Reproduction of Cancer at margin of sore—extension to left Breast.

CATHERINE SHUTTLEWORTH, æt. 53, came under my care as out-patient February, 1862. She was a short, feeble-looking woman. In the right breast was a red nodule, which was not generally painful, except at change of the weather. This tumour had been about eighteen months in forming. She had gouty finger-joints, and had suffered much from rheumatism. Twenty-seven years since she had rheumatic fever. In September, the centre of the nodule, which had rapidly enlarged, began to slough; the veins in the tissues surrounding had dilated. In October her general health was yielding to the tax of local irritation, and she was admitted in-patient. There was a deep hole in the breast, of over two inches in diameter, with a greyish "foul" base, irregularly

* The cases were, for the most part, under my care while in the hospital. The *post-mortems* were carried out and the cases recorded by the gentlemen who from time to time held the post of Pathologist or of Registrar of the Cancer Department.

circular, with sharp-cut sides also foul. The immediate edge surrounding this pit was slightly everted, and beyond this everted margin a rounded raised collar, about half-an-inch in width, of new formation, highly vascular, marked on the surface by numerous thin-walled vessels. The cutis œdematous, and swollen up between the orifices of the ducts of the sweat-glands and of the follicles. From the sore was discharged a dirty, fœtid, brownish fluid. The steps by which this condition of parts was arrived at, were as follows: first, the painless deposit of cancer material giving rise to some increased local vascularity; the further extension of the deposit, and lastly a gangrenous sloughing.

The patient died in December the year following. The case lasted over a period of about three years.

Post-mortem Examination.—The opposite breast and the axillary glands on both sides had become cancerous. The sternum was infiltrated with cancer. There was pulmonary subpleural cancer, and cancer of the supra-renal capsules, of the brain and the base of skull.

CASE II.

Cancer of both Breasts.

CAROLINE TRAVIS, æt. 53, late out-patient; admitted January 20, 1871. "Consolidated cancer of left breast; small nodule in the right breast, with small, hard glands in axilla. Disease commenced three years since; there are tubercles in the skin, and patient suffers pain down the arm." Three months later, nodules appeared around the nipple of right breast. Death took place June 18th, 1871.

[Dr. Sydney Coupland, "Path. Soc. Trans.," vol. xxvii., reports upon a case of cancer of both breasts and ovaries. The patient was 24 years of age; the disease first declared itself in the right breast, which was removed along with an axillary gland on the 22nd April, 1875. She was discharged convalescent on the 11th June.

Towards the end of September she was re-admitted with recurrent nodules, which were removed. In November, a second recurrence took place, beginning at the same spot, in the right mammary region; then the left breast became extensively infiltrated, and there was a rapid dissemination of scirrhous knots, through all the soft tissues, over the front and sides of the chest. She died a fortnight afterwards, cyanosed and suffocated. On the *post-mortem* there was found no implication of the ribs or parietal pleura. The left pleural cavity contained a large quantity of dark straw-coloured fluid, both Ovaries were cancerous.

Dr. Coupland appends to his report an analysis of 89 cases of mammary cancer examined after death. In 17 (19·1 per cent.) both breasts were affected.]

CASE III.

General Cancerous Infiltration following in less than twelve months after Amputation of left Breast—Death within seventeen months after discovery of Primary Tumour—Right Breast also affected.

HANNAH GODFREY, schoolmistress, æt. 55, admitted into the Middlesex Hospital, March 18, 1878. "In the left pectoral region is a linear cicatrix in a deep groove made by the swelling of the tissues around, the breast having been previously amputated. The integuments from the clavicle downwards are thickened and firm, with a slightly reddened skin surface; the induration extends into and even beyond the axilla. The left arm and the hand are swollen. A large mass fills the axilla. The right breast is consolidated, hard, and nodulated; the nipple is flattened. The respiratory movements are impeded by the rigidity of the chest-walls. The patient is not emaciated. Intense pain, dyspnœa, and progressive debility are prominent characters in this case." Fifteen months previous to admission the patient discovered a lump the size of a pigeon's egg in her breast. It increased, and the nipple

became retracted and the skin indented. In August, 1877, this breast was amputated by Mr. Brook, at the Lincoln Hospital. The wound healed in five weeks, *but pain continued*. In November a small nodule, not larger than a pea near the scar, appeared, and the condition of brawny induration as above described.

The tumour, thus, was discovered in January, 1877; the operation was performed in August; the secondary infiltration commenced in November. Death took place May 5, 1878.

Post-mortem.—"Body well nourished, much subcutaneous fat in thoracic and abdominal parietes; marked œdema of left arm and hand.

"In the left mammary region is a deep cicatrix. The skin in the neighbourhood much infiltrated with cancer; left axillary glands large and cancerous, and bound together in a mass around the axillary vessels. Right breast the seat of scirrhus cancer. The left pleural cavity contains nearly two pints of dark amber fluid; the lung, collapsed, lies against the spine. The right lung, 19 oz., covered with recent lymph, presents red hepatization of its lower lobes; left lung, 8 oz. Both lungs studded on their pleural surfaces with opaque white, flattened nodules. Heart, $8\frac{1}{2}$ oz., pale, soft, flabby; liver, $47\frac{1}{2}$ oz., markedly fatty; spleen, $3\frac{1}{2}$ oz., soft; right kidney, 3 oz.; left kidney, $3\frac{1}{2}$ oz."

CASE IV.

Acute Cancer of Breast, simulating at its onset Acute Mastitis.

Extract from paper read at Clinical Society.—"ANNE DOUGHTON, æt. 45, single, a well-nourished woman of healthful aspect, admitted into the Middlesex Hospital, February 1, 1877, having in the right mamma a large, hard, smooth mass occupying the lower half and extending on the inner side to above the level of the nipple. The appearance of the skin covering the swelling was

natural, though tense and ruddy. The nipple was somewhat flattened, but not retracted; the nipple of the left mamma having the same peculiarity. There was no great degree of tenderness except at one point, but a greater elasticity was felt at the outer side of the nipple than at other parts.

“Hitherto the patient has enjoyed good health. Her parents were living; there was no history of cancer. About the middle of December, 1876—that is, six weeks before admission into the hospital, she had accidentally received a blow on the breast affected. No pain or bruise immediately followed; but a week afterwards, however, whilst in bed, she felt a slight pain in the lower part of the breast, and then found a small lump. The lump did not increase and for about a month was not very painful; later the enlargement was rapid and the pain became severe.

“On admission the patient was sleepless, without appetite, and to all appearance was suffering from acute mastitis. I made an exploratory puncture with a long narrow-bladed knife, without result. Menstruation occurred once after admission into the hospital.

“In the early part of April there was some superficial ulceration, and tubercles of cancer appeared in the skin over the external side of the breast; by June, infiltration had extended far beyond the limits of the breast, the whole of the right upper extremity had become tense and swollen, and the pain was constant and excruciating. Death took place on June 15.”

Post-mortem (by Dr. Findlay).—“The body very slightly emaciated; right arm œdematous from the shoulder. The whole mamma was the seat of hard cancerous deposit, on section firm and bloodless, and was adherent to the subjacent structures; the axillary glands were enlarged and hard (as were also the axillary glands of the opposite side). The right lung was adherent throughout its whole surface to the chest-wall and diaphragm. It was œdematous, and the bronchial mucous

membrane was injected and thickened. The left pleural cavity contained sixteen ounces of turbid yellowish fluid, and the pleura, visceral, and parietal, was coated by a copious deposit of recent lymph. The left lung was in a condition similar to that observed in the right one. The heart was soft and pale; liver, large, pale and greasy."

CASE V.

Acute Cancer commencing apparently in the Axillary Glands, followed by invasion of the Breast.

SUSAN WILLIAMS, æt. 60; admitted December 23, 1869. Seven months previously she noticed a small hard lump, about the size of a hazel-nut, in the left axilla. A month later the breast became somewhat hard. Three months since the arm began to swell. On admission, the whole of the left breast and the left axilla were involved. There were numerous tubercles over the surface, some commencing to ulcerate. The skin was everywhere adherent, the hand and arm swollen and œdematous; gouty deposits in the right hand and wrist. She died February 13, 1870, the disease having been thus of less than a year's duration.

CASE VI.

Acute Cancer—Death within twelve months—History of Injury.

MARTHA BARNES, æt. 54, from Malmesbury, Wilts. Admitted December 8, 1870. "Twelve months since, struck her left nipple with the handle of a broom. She suffered some pain for a little while, but noticed no swelling. Last June (six months after the blow) she found a tumour. On the 10th of August she observed, after doing hard work, her left arm to be swollen; the tumour had then attained only the size of a walnut.

There were some swellings in the neck along the anterior border of the trapezius."

On admission.—"In the left mamma is a tumour the size of a goose's egg. There is retraction of the nipple. Above the nipple dimpled portions of skin, and general œdema of cellular tissues over the breast; glands along the pectoral muscle and in the axilla enlarged. Much induration beneath the pectoral muscle, and in the posterior triangle of neck. Breast not freely movable on muscle; arm very much swollen down to the wrist. Much pain in arm and breast. Cannot raise the arm to a right angle with the trunk. No emaciation." The patient remained in the hospital for a few weeks only, leaving unrelieved, January 10, 1871.

Through Mr. Charles Wightwick Pitt, of Malmesbury, I learnt that the patient survived until the following April.

Mr. Pitt writes: "Martha Barnes died April 6, 1871. I see in the Mortuary Register, 'Secondary cancer of the pleura,' not, however, verified by *post-mortem* examination."

CASE VII.

Cancer of both Breasts—Right Breast ulcerated—General Induration of Left Breast—scattered Pisiform Tubercles—Œdema of right arm—numbness of right hand.

JESSIE BREND. October 22, 1863. Last Christmas (1862) the right breast began to itch; brown spots then appeared; afterwards a redness, succeeded by pain. The left breast was unaffected at that time. About March last (1863) was admitted out-patient. Two months afterwards the breast "broke," and a great deal of discharge ensued. About three weeks later the left breast was noticed to be hard: pain quickly followed Soon after the date of her admission as out-patient (March, 1863) the right arm began to swell, and a numbness

commenced. Three weeks previous to her admission as in-patient as above (October 22, 1863) there was also numbness from hip to knee of the right side. The patient died January 6, 1864, the disease having carried her off in little more than one year.

CASE VIII.

Cancer of Breast—Operation—Complete Absence of Reparative Reaction—Death—Post-mortem.

(From notes by Mr. Davis, who acted as interpreter).

ANNE EVANS, æt. 52, married, from Aberystwith. Could not speak English. Admitted December, 1876.

“Tumour of right breast, six months’ duration. In outer part of right mamma is a movable, firm nodule, about the circumference of a shilling: from it anteriorly towards the nipple, the gland tissue is condensed and uneven; the rest of the breast is soft; nipple prominent; no adhesion of skin; a very small round gland felt in axilla.

“Has had five children. After her second child, abscesses formed in *left* breast, has since used only the right breast for suckling. *Pain in right breast twelve months before admission*, and tumour, about the size of a pea, in outer part of breast, above the nipple. General health always good.”

Family history.—A brother had a tumour on right arm above wrist which first appeared when he was about forty-five or fifty years old; it slowly grew for some years, and, at last, his arm was amputated above the elbow, and he has remained in good health.

On the 18th January following, the breast was amputated, and the small axillary gland was removed.

19th.—Morning, T. 102°; evening, T. 103·2°. Pulse, 132.

20th.—Wound discharging very freely; there is little inclination for reparative action in the flaps.

30th.—2 p.m., temperature, 103°. Pulse very weak and intermittent, respiration shallow.

After a fortnight of high fever, etc., death took place on February 2nd.

Report of Post-mortem.—"Body fairly well nourished. Right mammary region occupied by a large gaping wound, exposing pectoral muscle, which is slightly covered by thin sero-purulent fluid. No union between margins of wound; no granulations. On dissection, the subcutaneous tissue in the neighbourhood, especially towards the sternum, was seen to be infiltrated with blood.

"In *left* pleural sac there occurred about fifteen ounces of pale straw-coloured fluid; no lymph; no undue vascularity of pleura. On right side a few ounces of similar fluid was met with, also without any lymph.

"The right lung was for the most part pale and somewhat emphysematous. The left lung was in a great measure collapsed; it was bound by a few old adhesions to the posterior thoracic wall. Its lower lobe was quite airless, tough, and fleshy-looking. There was no evidence of pneumonic consolidation.

"The liver was of large size, vascular and fatty.

"Spleen soft, but not enlarged.

"Kidneys full of blood, slightly granular on surface, but no noticeable wasting of cortices.

"Heart, 12½ oz.; right lung, 21 oz.; left lung, 24 oz.; spleen, 8 ozs.; liver, 68 oz.; kidneys, 6 oz. each."

CASE IX.

Cancer of the Breast—Family History of Cancer and Tumour.

—SHELDRAKE, aged 50, had been under the care of Dr. Barford, of Munster Street. Induration of the whole breast. Admitted April, 1860; died August the same year. She had two sisters who died of cancer of the breast, and had one sister, aged 60, living, with a tumour of the belly.

CASE X.

Cancer of the Lymphatics of the Axilla. Hemiplegia.

MARY RAINBACH, æt. 73, sent to the hospital by Dr. Ayling, of Great Portland Street, admitted out-patient April, 1863, with cancer of axillary glands and œdema of the right arm. "There is a group of melanotic warts towards the lower border of the right breast; circular, hard warts on either side of the forehead." The patient died September 5th, 1865, and I was informed by Dr. Ayling that the disease had not made much progress. She had hemiplegia of the right side.

CASE XI.

Cancer of the Right Breast—Rapid recurrence after operations—Extensive Secondary Deposits—Invasion of the Vena Cava.

ANN WRIGHT, æt. 46. Admitted out-patient, March, 1863. Married. Seven children. She had a cicatrix in the right mammary region, like the inverted capital letter Y, at the upper extremity is a cancerous tuber. This cicatrix is the result of two operations on the breast, at University College Hospital. She first detected a tumour in December, 1861. Nine months afterwards, that is to say, in September, 1862, it was operated on, the disease re-appearing before the wound of the operation was healed. There was a second operation three months later, on the 17th December, 1862; *i.e.*, three months and a-half before her coming under my care. There was consolidation from the collar bone to the sixth rib. The axilla is full of deposit of white napiform cancer, extending through the ribs and sternum to the anterior mediastinum, thence into the vena cava superior, the lung containing secondary deposits. The liver is free."

Although the axillary vessels were surrounded by the deposits, the arm was swollen only as low as the elbow.

CASE XII.

Both Breasts affected—Atrophic Cancer of the Right Breast, commencing on Weaning—Nodules of Cancer in the Left Breast—Cancer of the Uterus.

MARY HOLLOWAY, æt. 42. Married. Five children. Admitted out-patient, June, 1862. Atrophic cancer of the right breast; axillary glands enlarged. The general health was bad. She had been under Dr. Chorley, at Marylebone Dispensary, with hæmoptysis. The cancer had existed twelve months, and it commenced on the weaning of her last child, which she had suckled eight months. Her father died aged 55, of consumption. Her mother died aged 40. She remained out-patient during ten months, by which time numerous nodules of cancer had made their appearance in the opposite breast. She died in the hospital, July 24th, 1863. On post-mortem examination the right lung was found adherent at a part corresponding to the breast. The left lung was free from adhesion. There were cancerous nodules in the liver, and *the os uteri was cancerous.*

CASE XIII.

Cancer of Left Breast at early age, commencing during pregnancy with fifth child—Mastitis after birth of third child—Cerebro-spinal symptoms and excessive obesity.

(Extract from Paper read at Clinical Society.)

Mrs. R——, æt. 27, the mother of five children. I saw Mrs. R—— first on the 23rd of April, 1872, only two months after her confinement with her fifth child. There was a tumour in the axillary lobes of the left breast, not well defined, and about the size of half an orange. This tumour she discovered in November, 1871—that is, at the seventh month of her pregnancy. After the birth of her third child she had suffered from inflammation of the affected breast, terminating by resolution, and she went through the next lying-in, in February, 1870, without

trouble, and nursed her infant until it was nine months old.

At the date of her visit to me, for which I am indebted to Dr. Saunders, then of Hinde Street, the nipple was somewhat retracted; but taking into account her recent confinement and the obscure limits of the tumour, I was led to hope that it might be a simple inflammatory swelling of the axillary lobes of the gland. The patient was pale and weak. I consequently ordered her steel and cod-liver oil, and suggested that she should go into the country. I saw her again on June 19; the tumour had put on a definite aspect of being cancerous: it had become stony, and the skin over it was puckered, and it was more painful than formerly; she had then ptosis of the left eyelid. I proposed, *if the painfulness became excessive, or even increased*, that the tumour should be removed, although I considered the case one in which a very temporary relief only could be expected from operation. The patient, however, declined to have anything done. She died in October; and Dr. Saunders gave me the following further particulars:—"After you last saw Mrs. R—— she continued to take the cod-liver oil and tinctura ferri, and in a fortnight's time, or thereabouts, became so oppressed with fat that I was obliged to discontinue the oil; the fat lay in rolls over the abdomen and also over the ribs, and her breathing became oppressed. The patient lost the use of her lower limbs about two months before her death. She had very little pain in the breast, which became hard, rather larger, and fixed; there was no ulceration, but the nipple was slightly excoriated. She had, however, frequently pain down the left side of the neck, extending over the scapula. This pain was sometimes intense, and required for its alleviation the injection of morphia. The ptosis became complete and the left eye everted. The thirst was unquenchable; the temperature in the axilla towards the latter part of her illness reached 104°. The patient gradually sank." No post-mortem was made.

[A case of acute carcinoma of the breast almost parallel is reported in "The Middlesex Hospital Journal," Vol. III., by Mr. J. B. Davey. The patient, under the care of Mr. Pearce Gould, was æt. 29; had borne four children; after suckling the last one about eight months symptoms of mischief commenced in the left breast and the axillary glands participated. The patient died within four weeks of her admission into the hospital, having a temperature of 101·8, and somewhat higher towards the end. The post-mortem showed infiltration of the left breast and a similar condition of the right breast, effusion into the left pleural cavity, the lumbar vertebræ were invaded, both suprarenals were cancerous.]

CASE XIV.

Scirrhus of Breast—Amputation—Immunity from Recurrence during two years.

CAROLINE MCGUINNESS underwent amputation of the breast, by me, March, 1867. On December 24, 1867, she was examined in the presence of Messrs. Colborne and Webster, then students at the hospital, when no remnant or return of the disease could be discovered. She was again examined in the presence of Mr. Rees, of Hampstead, April 24th, 1868—no evidence of induration or return of disease. She was again examined October 6, 1868—no return of disease at the site of the operation, but there were suspicions of nodules in the liver. She was examined again April, 1869, when a small "lump" was discovered at the *upper* border of the cicatrix of the operation. She was re-admitted September 9, 1869, with symptoms of carcinoma of the omentum, and she died October 15, 1869.

CASE XV.

Cancer of Breast—Swelling of Arm which partially subsided.

ELIZ. ARNOLD, æt. 60. Admitted June 3, 1871; died June 30, 1873. At upper and outer side of left mamma

is a foul ulcerated surface the size of half-a-crown, the edges of which are hard, red, elevated, and nodulated. There are several hard nodules scattered over the surface of the breast, and the axillary glands are enlarged. There is little pain; there is œdema of the left arm. Note of October 25, 1872, "Patient thinks the swelling of arm has diminished."

CASE XVI.

Tumour of Breast—Amputation—Secondary Disease as blood-cyst near cicatrix, and subsequently hæmorrhagic cystic disease in axilla, and in lung—Family History of Phthisis.

ELIZABETH TUFFIN, æt. 50, admitted March 19th, 1869.

Nearly two years previously, June 18, 1867, I had, with Dr. Slight, of Clifford Street, removed the right breast, which was the seat of carcinoma. About a year subsequently a small, freely movable, spherical tumour, the size of a hazel-nut, formed, an inch to the axillary side of the cicatrix. This I removed by a simple incision, and it, apparently, was a single unilocular *blood-cyst*; but in October, 1868, the patient complained greatly of pain and of an enlargement at the anterior fold of the axilla, evidently secondary disease in the axillary glands. Ulceration took place, producing a hæmorrhagic sore. The discharge was extremely copious and offensive.

State on admission: "At the anterior fold of the axilla is a hard mass deeply ulcerated in the centre, from which there is a sanguineous discharge. Patient sleeps fairly well without sedative."

Towards the end of June the patient began to complain of a troublesome cough, and she died July 16th, 1869, four months after admission.

Post-mortem.—"Carcinoma right mamma and axillary glands; large cancerous growth of partially cystic character in right lung. Body much emaciated, œdema of lower extremities. There is a large open ulcer with ragged edges and surface, extending from the late seat of right

breast to the posterior border of axilla. It is of a dark colour; the ulceration extends deep into the base of the neck and beneath the skin as low as the sixth rib. Axillary glands enlarged. Right lung almost universally adherent by firm bands to the wall of the chest; at the apex of this lung are old cretaceous masses, and the lower lobe, in its central half, was filled with breaking-down cancerous deposit. The left lung healthy, as well as the other organs. The uterus, however, contained a large fibrous tumour in its walls. Weights of the organs: heart, $7\frac{1}{2}$ oz.; right lung, $20\frac{1}{2}$ oz.; left lung, $9\frac{1}{2}$ oz.; liver, 41 oz."

CASE XVII.

General Infiltration of Tissues of Pectoral Region after two operations for what appeared at the time to be a non-malignant Disease of Breast—Extensive lymphatic Disease of Abdomen and Cancer of Intestine.

ANN CRAWFORD, æt. 44, was operated on by me in the latter part of the year 1876, for what appeared to be an adenoid tumour of the left breast: the wound never satisfactorily healed, a small sinus remaining. She was re-admitted, August 18, 1877, and Mr. A. Clark removed the whole of the breast, and she was discharged convalescent, September 27, 1877. A note was made by the Registrar to the effect that a single walled cyst only was found in the removed parts. The patient continued to show herself to me at the hospital, and shortly began to complain of severe pain in the arm and shoulder. She was eventually re-admitted into my cancer ward, the real character of the induration having become too evident; she continued to suffer extremely, and died March 12, 1878.

Post-mortem.—"Fairly well nourished; left arm œdematous, with a hard brawny œdema which extends also over the left half of the chest; left lower limb also œdematous. A deep, puckered, radiating cicatrix occupies

the left mammary region, and extends into the axilla. On the right side is a hard nodule the size of a chestnut, in the upper part of the mammary region above and to the outer side of the nipple; whilst a large indurated gland adherent to the skin can be felt in the axilla. Other nodules scattered in various parts of the skin of the thorax: the breast itself is for the most part atrophied and replaced by fat; imbedded in its upper part is the hard nodule referred to, it is fibrous and glistening on section, except in the centre, where it is opaque and yellowish. The right axillary glands are firm, white, and glistening, and adherent to the skin, to one another, and to the subjacent vessels.

“On dissection, the tissues of the left side of the chest are found sodden with œdema. The pectoral muscle is pale and atrophied; whilst interspersed among its fibres are nodules and *bands* of opaque white cancer. Above, in the subclavicular and upper axillary regions, the vessels and nerves occur firmly imbedded in and concealed by tough, fibrous new growth. The left pleural cavity is filled with a quantity (four pints) of dark, straw-coloured fluid. The left lung, entirely airless, lies completely collapsed against the spine—its texture extremely tough, and uniformly black throughout. On the right side there are numerous fibrous adhesions between the lung and chest-wall; the lung, intensely gorged with blood and very pigmented, contains no nodules of cancer. The heart, overladen with fat; the muscular substance firm, valves healthy.

“Abdomen: in the right lumbar region a rounded lump, the size of a fist, was seen lying behind the peritonæum. This proved to be the upper extremity of the right kidney displaced and firmly fixed in this abnormal position; besides adhesion to the large bowel, it was adherent to the second part of the duodenum, whilst by its hilus it was attached to a mass of cancer, continuous with cancer in the mesenteric glands. The mesenteric glands formed a large nodulated conglomerate mass,

intersected by bands of white scirrhus material. The peritoneal surface of the greater parts of the small intestine presented a striking appearance from the infiltration and distension of lacteal vessels. These extended as opaque white lines of the size of whipcord from the mesenteric glands to each surface of the bowel, where they appeared as beaded strings and filaments, breaking up into a fine network. The larger lymphatics accompanied the arteries and veins. Some of the most marked of these distended lacteals occurred in the duodenum, but they could be seen at intervals at different parts of the ileum. About the middle of the ileum some hard white nodules of the size of a pea were met with at the attached border of the bowel, a few involving the whole thickness of the coats appearing on the mucous surface; about 39 inches above the ileo-cæcal valve the bowel was encircled by a hard white mass of new growth, shaped like a signet-ring. Internally the gut was narrowed, not admitting the tip of the little finger. The large bowel was free from cancer. The stomach and duodenum were adherent to the pancreas, and this again to the mass of mesenteric and retroperitoneal glands, closely involving the aorta and vena cava; some dilated, but not beaded, lymphatics were seen on the surface of the stomach. Right kidney was very large, especially the anterior (or upper) end, and on stripping off the capsule the whole surface was seen thickly studded with opaque white and yellowish-white prominences, the size of a pin's head, some softened and purulent. On section, the whole organ, both in its cortical and medullary parts, was marked by opaque lines, corresponding to prominences on its surface. Left kidney presented the normal red colour on the surface, which was smooth. The organ was of large size, and 'wet' on section. Uterus retroflexed, and fixed by firm adhesions to surrounding parts. On left side a group of inguinal glands surrounded the femoral vein, which was blocked by a firmly adherent thrombus. Spleen soft; liver large and firm. No secondary nodules;

nor were any cancer nodules met with in the general peritoneum.

Weight of organs: heart, $10\frac{1}{2}$ oz.; right lung, 20 oz.; left lung, $8\frac{1}{2}$ oz.; liver, 58 oz.; spleen, $7\frac{1}{2}$ oz.; right kidney, $8\frac{1}{2}$ oz.; left kidney, 7 oz."

CASE XVIII.

Cancer of Breast, complicated with Disease of Nervous System. Youngest of twenty-two children.

CAROLINE TREE, æt. 56, came under my care November 26, 1868. She had been operated on three months before for cancer of the right breast, commencing two years previously, by Dr. Owen, of East Farley, Kent. There was a horizontal cicatrix above the line of the nipple. The disease returned, and on the day that she was to be again operated on (at King's College Hospital, a few weeks before coming to the Middlesex Hospital), she had an epileptiform seizure, and the surgeon declined to treat the case. She was the youngest of twenty-two children; was a remarkably healthy-looking person; hair *quite free from greyness*; but the skin over the shoulders was marked by numerous brownish, sessile warts.

Father died of apoplexy at 75.

Patient was admitted into the hospital, and I removed the remainder of the breast, January, 1869; and she was discharged convalescent March 16th; but died, April 24th, with symptoms of brain disease.

Mr. Jonas King, of South Lambeth, gave me the following particulars:—"I saw Mrs. Tree, March 19, three days after she left the hospital, when I found her in good spirits, without any bad symptom, wonderfully improved in health, with scarcely any remains of the wound, and apparently progressing most satisfactorily towards recovery. About a week afterwards I found her with her mouth very slightly drawn to the left side and complaining of loss of power in the right foot; the

tongue was perfectly straight, and there was little difficulty in articulation, but want of power of expressing ideas or wishes. . . . The paraplegic symptoms increased, as well as the aphasia, though the retraction of the mouth disappeared. Latterly she had long comatose sleep, extending sometimes to twelve hours or more, from which it was very difficult to arouse her. She had want of power in deglutition, fluids finding their way into the trachea and causing cough, and she could not swallow solids. She gradually sank, and died 23rd April, having been quite comatose from the 20th."

CASE XIX.

Disseminated Cancer—Hæmorrhage—Watery state of blood preventing coagulation.

MADAME M——, aged between 40 and 50, native of Germany, was seen by me first on December 22nd, 1876. She had excavated and adherent cancer of the right breast, which had already existed two-and-a-half years; the glands in the axilla were enlarged. She had been under the care of Professor W——, of Vienna. She was the eldest of a family of six, all of whom were living. She was again seen by me on October 20th, 1877, having in the meantime developed numerous semi-spherical tumours of secondary cancer in various parts of the body, especially over the abdomen and trunk; the patient was very stout. She was under the care of Dr. Skrimshire, Talbot Road, Westbourne Park, who wrote to me on October 25th, remarking upon the wide dissemination of the cancerous disease, and upon the deep jaundiced hue of the skin, and stating that she was passing bile with the urine in considerable quantities, very little by stool. He described her digestion as much impaired, and appetite "nil." I saw Madame M—— towards the end of November, in consequence of unrestrainable hæmorrhage from the breast. The blood was very

watery and refused to coagulate on the application of styptics.

Dr. Skrimshire informed me that the patient died shortly afterwards from the exhaustion consequent on the hæmorrhage from capillaries on the surface of the sore in the mammary region. He also informed me that one of the secondary nodules had given way about ten days previous to death; it discharged for a few days, and then ceased to do so. The secondary tumours were not only over the abdomen and pectoral region, as just stated, but over the back, thus causing great suffering from the pressure of the patient's body.

CASE XX.

Cancer of Both Breasts—History of Operation followed by Gangrene—Temporary abatement of grave symptoms.

MARTHA BONNER, æt. 36; admitted February 6th, 1863. "The left breast has a cicatrix extending to the axilla, surrounded by a hard ridge; the axillary glands are enlarged.

"The right breast is shrunken, the skin over it is puckered, and the axillary glands are enlarged. There is acute darting pain in the nipple. The patient also complains of pain in the epigastrium; she vomits after all other food than dry crusts of bread; an indurated, sharp edge can be felt towards the spleen, and there is extreme tenderness in the right iliac fossa; pulse 100; general debility and anæmia. There is no family history of cancer, and until December, 1860, had ordinary good health; when, being pregnant three months, she had a flooding, and again in the following March, and finally she was delivered of a dead child in April. In September, 1861, she suffered pain in the left breast, and she noticed that it was drawn upwards towards the axilla, the pain later on becoming more acute and of a shooting

character; December 30th she was admitted into University College Hospital, and on January 8 following the breast was removed by Mr. Erichsen, she was then again pregnant five months. The wound was seized with hospital gangrene. In June the patient observed a swelling in the right pectoral region."

Feb. 21st.—About a fortnight after her admission into the Middlesex Hospital the patient complained of partial loss of sensation in the left arm. March 2nd.—"She cannot take a deep inspiration without great pain." March 6th.—"No pain, appetite bad, and there is difficulty in breathing."

March 19th.—"Cough, breathing laboured, no sleep, extremities and lower part of abdomen œdematous." March 23rd.—"œdema increased, appetite improved, cough less." March 26th.—"Abdomen less œdematous." *From this date the patient steadily improved, and on May 19th she left the hospital at her own request, able to walk comfortably.* However, she was re-admitted on June 20th.—"Breath short, pulse weak, great œdema of the lower extremities, and she died three days afterwards, June 24th."

At the *post-mortem* examination there was found pleuritic effusion. Both lungs soaked with serum. Fluid in the pericardium; heart $12\frac{1}{4}$ ounces in weight, aortic atheroma, liver enlarged, studded with firm white nodules; spleen elongated, much enlarged, very firm, numerous cancerous patches scattered over its surface.

Uterus normal; both ovaries enlarged with cystic degeneration and carcinomatous deposit.

CASE XXI.

Chronic Cancer of Breast—Anomalous Alterations in Appearances—Gain in Weight.

Miss G——, æt. 45. Sent to me by Mr. Shepherd, of New Cavendish Street, January 19, 1876, with scirrhus

of the left breast. The whole gland was solidified, and the nipple was retracted, as well as the skin immediately surrounding. The axillary glands were hardened and distinct. Three years previously she had a blow on the breast; the patient was anæmic, and suffered considerable pain. She was left-handed.

I made from time to time the following notes:—

April 11, 1876.—The breast is more nodular.

November, 1876.—The breast is more movable, and feels to the touch more cystiform. The patient has gained 14 lb. in weight, being now 8 st. 10 lb., and measures $2\frac{1}{2}$ inches more round the waist; she complains of much pain in the loins and back, preventing quick walking; has hæmorrhoids. I examined the abdomen to ascertain if the liver were enlarged, but could detect nothing abnormal.

May, 1877.—Condition about the same.

June 23, 1878.—The tumour of the breast is diminishing; *menstruation ceased last December.*

May 25, 1879.—Axillary glands no longer distinct; the central depression of the breast remains. Patient complains of pain in the lower part of back and of the left side of the chest. She has grown very stout; suffers from “heats and flushes.” Has been working hard as milliner daily from 7 a.m. to 10 p.m.

September 29, 1879.—Has lately had much pain and aching from shoulder to elbow. The arm does not swell; pain generally worse at night; weight, 9 st. 12 lb.

December 24, 1879.—Has severe cough and pain in the side, but proposes to visit some friends in the country during Christmas holidays.

May, 1880.—Seen by me. November, 1880. Died in Cancer Hospital. Dr. Newcome W. Bourns, the House Surgeon of that Hospital, obligingly informed me that the patient died suddenly, having “well-marked signs of intrathoracic deposit, but no post-mortem examination could be made on account of the friends refusing permission.”

CASE XXII.

*Chronic Cancer of the Breast—History of Operation—
Necrosis of Secondary Deposit—Cicatrization of Ulcer—
Spinal Symptoms which in great measure disappeared.*

(Extract from Paper read at the Clinical Society.)

“ANN F——, spinster, æt. circa 41. First came under my notice July, 1868, at the Middlesex Hospital, Out-patient Cancer Department. There was on her left pectoral region a scar resulting from an operation, for the removal of a tumour from the breast, two or three years previously, by Mr. Henry Smith, at King's College Hospital. The scar ran obliquely upwards and outwards. The patient stated that a part only of the breast had been removed with the tumour. There was induration of some of the axillary glands, and of the contiguous tissues, the mobility of the arm being thus impaired. Along the margins of the scar, which was superficially ulcerated, were some yellow-red tubers about the size of hazel-nuts, rather dry and rough. The patient had discovered the original tumour two years before Mr. Smith's operation; therefore the disease at the date of her application at the Middlesex Hospital already had existed at least four years. The recurrence of the cancer took place, I believe, about twelve months after the operation; on this point I cannot, however, speak with complete confidence. The patient continued as out-patient during two years, the tubers at the upper margin very gradually increasing and merging into an oblong protuberance overhanging the scar. The noticeable facts in her history during this period were: A fall in October, 1869, which appeared to aggravate her ordinary discomfort; the healing of the ulcerated surface of the scar in January, 1870; and an increased painfulness of the affected parts in March, which continued, and determined her admission as in-patient in June following. Her condition at that date is thus noted:—

“In the cicatrix running from the seat of the breast

backwards and upwards to the anterior fold of the axilla are several roundish, hard, granulating nodules; the tissues are puckered, and in the surrounding skin are some small, hard, red nodules, some of these quite low down on the left side; some smaller pea-sized swellings in front, and one as low down as the end of the second piece of the sternum. There is tenderness over the liver, but no nodules or enlargement can be detected."

We have now reached the sixth year of the duration of the disease.* I found, further, on the patient's admission, an undue dulness of the lower part of the thorax on the right side. About the middle of July there was so much pain in the back that the patient could neither raise herself nor turn in bed. By the middle of August the mass at the upper border of the cicatrix had inflamed and become gangrenous: it sloughed cleanly out, and the sore gradually healed, and remained sound for the rest of the patient's life. In October there was a numbness and motor paralysis of both legs. In November the tongue became "beefy," and the paralysis continued. In February, 1871, my colleague, Dr. Henry Thompson, diagnosed "extensive pleuropneumonia of the left lung, occupying nearly the whole of it." But by July 18th the patient had so far recovered health and strength as to be able to walk across the ward. In October the left side of the thorax was found to be dull. In November she suffered much dyspnoea and cough. In January, 1872, she complained of great pain in the right shoulder, and in April of pleuritic pain in the *right* side. In July diarrhoea threatened to be troublesome, but was checked by sulphate of copper and opium. On August 13th the abdomen was tympanitic and tender, the tongue coated in the centre, the breathing somewhat laborious. P. 104, R. 34, T. 97°. There was

* I may mention that the Registrar noted that the first observation of a tumour by the patient herself was eight years before her admission into the hospital.

evidence of fluid in the peritoneal cavity, and of enlargement of the liver, over which organ a friction or crepitation could be felt; and there could be also felt a nodulated condition of its surface; the urine, tested with nitric acid, gave the bile tinge. The temperature up to the date of the patient's death on August 27th, was observed daily, but it never exceeded 98.1° . The above are the salient epochs in the patient's history: From time to time there were developed in the skin around and about the cicatrix small shining tubercles, but what was remarkable, individual tubercles wasted away and almost disappeared. Mr. De Morgan was so good as to look at the case occasionally, and especially noticed this fact.

The following is an extract from the P.M. Register :

“The left arm was tightened to the side of the trunk by a mass or group of nodules of deposit; the deposits were found, for the most part, to extend no deeper than the cutis; in one or two spots only was the fascia covering the intercostal spaces involved. There were nodules of cancer on the inner aspect of the fourth and fifth ribs and on the *outer* aspect of the eighth rib of the right side; this last-named deposit involved the proper structure of the rib itself. There were no deposits of cancer in the lungs. The left lung was small, splenified, and inelastic, and firmly adherent to the chest-walls; this lung weighed $11\frac{1}{2}$ oz., the right lung weighing 17 oz. The liver weighed $7\frac{1}{2}$ lb., and was studded with innumerable cancer-deposits; around the circumference of each was a bright yellow border of liver-tissue, and *in the centre of some, on section, was seen the open mouth of an hepatic vein.* The liver reached on the right side to the third, and on the left to the fifth intercostal space; downwards it extended below the umbilicus. Twenty ounces of serum were taken from the peritoneal cavity. The uterus contained fibroids, one of which was calcified.”

CASE XXIII.

Scirrhous of Breast—Amputation—Rapid Recovery, living in 1881.

ELIZA SEARLE, æt. 53, from Hammersmith; admitted to Regent Ward, September 6, 1871. Under the care of Mr. Morris.—*State on admission* (from ward card); “In the left breast is a hard circumscribed tumour, the size of an egg; it feels lobulated on the surface, and is freely movable on the chest wall. The skin over it can be pinched up. There is a very small indurated gland in the axilla. The patient was first aware of the tumour six weeks ago, and she does not recollect having received a blow on the breast.”

“September 8.—Under chloroform. Breast with tumour removed; a few minute vessels were twisted, no ligatures used. Wound washed with *lotio zinci chloridi*, gr. ii., aq. $\frac{3}{4}$ i. Dressing of carbolic oil, pad, and bandage.

September 9.—9 p.m. P. 68; no pain in breast. The catheter required for relief of bladder. Some pain in the lower part of the abdomen. Patient states that to relieve an uncomfortable feeling, caused by a displacement of the uterus, she has been in the habit of frequently changing her position in bed, and that the lying so long in one position, as she had done for over twenty-four hours, was probably the cause of her uneasiness. The wound is quiet, the incision appears to have united throughout. Tongue rather furred. Pulse 72. September 11.—Slept well last night, pain in abdomen much diminished. The wound is perfectly quiet, the incision has united without any suppuration. There is some ecchymosis in the upper flap; all sutures removed. 12th.—The part continues quiet. 15th.—Union complete. 26th.—Discharged convalescent.”

Mr. F. H. Alderson, of Hammersmith, formerly resident Medical Officer of the West London Hospital, had the great kindness to follow up the case, and he

reports, November 19, 1880, as follows:—"I consider Eliza Searle fairly well for her age, she is not much emaciated; four or five years after the operation in the Middlesex Hospital, the cancer began to show itself in the cicatrix: there are now two nodules, respectively of the size of a hazel-nut and a walnut. The axillary glands are not affected, and she does not suffer much pain. Growth appears to be very slow. E. S. has no constitutional symptoms, no sickness, no especial weakness, all her symptoms are local. As far as I can see there is no reason why she should not live for several years."

CASE XXIV.

Cancer of left Breast, eighteen years' duration—Three years' interval between discovery of a "Tumour" and operation; four years' freedom from return—extension to right Breast.

SARAH RILEY, æt. 51. May 2, 1871.—The note on ward card is as follows:—"Over the sternum, on a level with the fourth intercostal space and towards the left side, is an irregularly-circular, hard, raised tumour, the surface of which is ulcerated and presents a bright-red margin with a yellowish moist centre: at the inner and lower border is a puckered depression covered by a scab, the remains of the nipple. The mass is not movable. The glands in each axilla are hard, enlarged, but movable."

"The line of an incision (a cicatrix) is visible on the left mammary region; at the inner extremity of this line there is a hard elevated nodule, half the size of a hen's egg, which is depressed in the centre. Glands of right axilla enlarged. Over the abdominal wall a number of hard nodules; the veins are abnormally prominent.

Eighteen years ago a small tumour first appeared, which in three years grew to the size of a small

egg. Fifteen years ago this was removed by Mr. Spencer Wells. Four years afterwards another tumour commenced near the nipple, this slowly increased and destroyed the nipple. During the past four months health has been rapidly failing. Lately over right breast small wart-like nodules have been noticed. Death, May 30, 1871."

Post-mortem.—"Pleura of both lungs seat of several small, irregular flat patches of cancer; at anterior margin of right lung are two nodules of the size of a toy-marble, others the size of an olive, quite superficial. In the liver a number of white round deposits of cancer varying in size from that of a toy-marble to that of a small shot. Membranes of spinal cord slightly congested. Heart weighed $8\frac{1}{2}$ oz.; right lung, 18 oz.; left lung, 11 oz.; liver, 45 oz."

CASE XXV.

Chronic Cancer of Breast—Repeated Necrosis and Cicatrization—Special Warty Condition of Skin commonly found in Epithelioma.

(*Extract from Paper read at Clinical Society.*)

M. A. HEPWORTH was admitted into the Middlesex Hospital, November 12th, 1873. Dressmaker; æt. 72; single. The Registrar made the following notes:—"Two years previously, the patient noticed a lump in the right breast, just above the nipple, this gave no pain. It has slowly increased, and at times is painful. For the last six months has been tender. The tumour is movable and circumscribed, about the size of a duck's egg. *There are no enlarged glands in the axilla.*

"The patient was a small, shrivelled woman, with a brownish skin studded with lenticular freckles, such as are commonly seen in those who are suffering from epithelioma, and that, *on close examination, appear to be sessile warts.* I advised the removal of the tumour, but the patient declined to undergo any operation.

After about a year of residence in the hospital, the tumour inflamed, and an axillary *gland became enlarged*; subsequently superficial ulceration occurred, *but the ulcer healed*.

In May, 1876, the patient complained of much pain in her limbs, and her appetite fell off. In April, 1877, the centre of the tumour sloughed out; *the surface of the resulting hollow, however, became after a time covered by a delicate cicatrix*.

In January, 1878, about a third of the circumference of the remaining mass sloughed in a similar manner; at some points, again, the same delicate cicatrization took place.

“The patient has now (January, 1878) been in the Middlesex Hospital four years, and is 76 years of age. The excessive weakness and anorexia have passed away, whilst the tumour itself has but slowly increased; it has undergone two acute attacks of necrosis. The condition of the axillary gland (or glands) remains nearly unaltered. There is no swelling of the arm. As regards family history, the patient’s mother died of phthisis, æt. 32; her brothers and sisters were all sickly, and died young.”

The patient lived until December 15th—that is nearly a year after the above report of her case was read at the Clinical Society. Gradually increasing debility was the only noticeable special feature during her latter days.

Post-mortem. — Examination made by Dr. Lyell, December 16th, 1878.—“Scattered over the skin, chiefly of the abdominal wall, were a number of darkly pigmented (some quite black) sessile warty excrescences, for the most part very small, and many not larger than a pin’s head. The right nipple and the greater part of the right mamma had been destroyed by an ulceration. The central part of the base of the ulcer was deep, and covered by a dark, offensive fluid, which, when washed off, revealed a discoloured sloughing surface beneath. The margin of the ulcer was raised, rounded, forming a wall of

infiltration. This wall was about 3 ins. thick, its surface of a dry, brownish colour, not ulcerated, and associated with patches of recent epithelial formation, exhibiting attempts at repair confined to the more peripheral and superficial part of the ulceration. The skin of the chest-wall beyond the raised margin of infiltration was natural; but quite at the outer extremity of this, which extended as far as the anterior wall of the axilla, immediately behind the lower margin of the pectoralis major, was an enlarged gland, apparently connected with the primary ulcer, and merely separated from it by a narrow bridge of non-infiltrated tissue. The ulcer was firmly bound down to the front costal wall beneath it. Below the clavicle some enlarged glands were to be felt.

“On reflecting the skin and ulcer from the chest-wall, the whole of the deep tissues, corresponding to the cancerous ulceration, were infiltrated, and rendered inflexible by a firm, whitish, cancerous, plaque-like mass, destroying the pectorals; at one spot corresponding to the fourth interspace the knife passed through an extension of the growth, where it had invaded the tissues between the ribs, and destroyed both intercostals at this point. The ribs above and below were intact, and the parietal pleura here retained its natural aspect.

“The axillary vessels were found to be partially surrounded at the upper part by a cluster of three or four enlarged glands. The opposite axilla contained a small gland which did not appear to be infiltrated with cancer.

“Thorax.—Both lungs were adherent in places to the costal wall. They were shrunken, small, and retracted. When removed, it was seen that the pleural surfaces of both were studded with small raised white-plaques of cancer. These mostly implicated the pleural and subpleural tissue only, but in other places extended a short distance into the superficial texture of the lung. They were scattered over the pleural surface, and were

not more than two-thirds of an inch in thickness, but in other places by coalescence, formed more extended flattened white plates. The costal pleura was infected in a much less degree; the anterior mediastinum showed no trace of enlarged glands or cancerous deposit. The pleural cavities contained a small quantity of serous fluid.

“The condition of the lungs was that of atrophous emphysema, the lungs being small and deeply pigmented, but almost entirely free from cancer, one or two small rounded nodules only being discovered in their substance close to the surface.

“The heart; left ventricle contracted, and its walls markedly hypertrophied, the muscular tissue being of a natural colour.

“Abdomen, no fluid in peritoneum.—Liver small, congested, slightly ‘nutmeggy,’ contained three nodules of secondary cancer; these were imbedded in the substance of the lobe, rounded in shape, of firm white structure, and about size of toy-marbles.

“Kidneys; granular, capsules peeled with difficulty—adherent; cortex diminished.”

Dr. Lyell made drawings of microscopical sections of the breast and liver which admirably illustrate the alveolar arrangement seen in scirrhus. *Vide* Plates X. and XI.

CASE XXVI.

Cancer of the Breast without Secondary Deposit.

MARY CALLAGHAN, admitted as an out-patient April, 1859. Mother of one child. Cancer of the right breast of ten years' standing. She died in hospital, April, 1863. There was no secondary deposit in the viscera, but gangrene of the posterior lobes of the lung. The ulcerated surface of the breast exposed the third, fourth, fifth, and sixth ribs.

CASE XXVII.

Cancer of the Breast, a Tumour having been removed from Breast thirty years previously.

“JEMIMA HINDLEY, aged 62, admitted September, 1861. Had a tumour removed from the breast by Mr. Baines, of Ludlow, thirty years previously.” On admission had a lump, not very prominent, round the base of nipple, warty growths from the nipple itself. “The enlargement is about the size of half an orange; it is not painful or tender. There is a bullet-like gland in the axilla.”

A *post-mortem* was made for me by Mr. A. Reeves, who found secondary deposits in the chest. (The patient died in her own home and the P.M. was consequently made under difficulties).

CASE XXVIII.

Cancer of Breast—Operation—Sixteen years' interval before recurrence, and survival of patient over 36 years.

SARAH CAMERON, aged 37, admitted as an out-patient, June, 1862. Scirrhus of the right breast with a chain of enlarged axillary glands. Mother died of cancer of the throat (so reported). Father living, between 60 and 70 years of age. The tumour commenced two years ago, and when first discovered was no larger than a pea. “In September the axillary glands were somewhat diminished; but the tumour very nodulated and not diminished.” I amputated the breast in the hospital. She was seen by me four years later, June 7th, 1866; she was complaining of pains in the hands and muscles of arm, which, however, passed off.—“Axillary glands not further enlarged in October, 1868. TEN years afterwards, in 1878, examined by me in the presence of the Clinical class at the hospital, a slight return of the disease having made its appearance at the upper edge of the scar.

The patient was living in 1898, but the ulceration slowly encroaching.

CASE XXIX.

Chronic Cancer, nearly ten years' duration.

JANET BETTS, aged 43, admitted October, 1861. "Tall, florid-looking woman. Has had thirteen children. Cancer of the right breast, which had already existed four years. There was retraction of the nipple, solidification of the lower part of the gland. No axillary or supra-clavicular enlargement. Suffers great pain, especially at change of the weather. The tumour is fairly movable; the arm does not swell. She sleeps badly, in consequence of pain." No family history of cancer. I advised operation; the patient would not submit. The patient continued to attend until June, 1864.

Reported by her Daughter.—The breast ulcerated and sloughed. Was confined to bed for nearly two years, and during the last year of her life was paralysed. She resided at Beaconsfield, near Windsor. Died July, 1866.

CASE XXX.

Fungus Hæmatodes—Operation—five years' interval before return—Family History of Phthisis.

MARY HOWARD, æt. 62, came under my care May 25th, 1864, first as out-patient, with fungus hæmatodes of the left breast. Her family history is remarkable. She was married æt. 19, and had borne seventeen children; she generally suckled twelve months. Her father, a Scotchman, died æt. 70; her mother æt. 90. She herself was the seventh of a family of fourteen; her youngest sister died of tumour in the abdomen; a sister, æt. 35, a sister, æt. 25, and a brother, æt. 30, died of consumption; a brother, æt. 61, of diabetes.

She was admitted in-patient June 2nd, 1865. The following notes are quoted from the Register:—

"A large tumour in the left breast about the size of a cocoa-nut, not quite movable at base; at the lower part the tumour is ulcerated, and the ulcer presents a ragged

fungoid appearance. The patient loses blood from the ulcerated surfaces and has pain, but not severe, in the tumour. There is one hard gland in axilla about the size of a small walnut.

“Six months ago patient first noticed a small painless lump in the breast, this in two months became painful and discoloured, and increased much in size.

“Soon afterwards the skin ulcerated, and blood and matter were discharged. There has been some bleeding since, but the patient has suffered comparatively little pain.” The breast has been inflamed during lactation on four occasions.”

A few days after admission I removed the breast; the incision requisite was from twelve to fourteen inches in length. I did not meddle with the axillary gland. The patient appeared to suffer nothing from the operation, not even losing a night's rest. . . . I find a note dated six months later to the effect that the patient was quite comfortable and that the axillary gland had not enlarged. The patient on leaving the hospital resumed her ordinary avocation, and thereby was able to support herself.

The patient was seen again by me as out-patient February 10th, 1870, when I noted that the arm had swollen; in May the breast bled; and June 4th, 1870, she was re-admitted. Thus, after a lapse of *five years* from date of operation, her condition was as follows:—

“About the centre of the scar of the operation is a papillary, red, ulcerated projection, extending upwards and towards the axilla into a hard, firmly fixed mass, the skin over which is not involved. The patient suffers much pain in the arm, which is somewhat œdematous; it is *not* different in temperature from the right. No pain on coughing or sighing, but the breathing is very distressed. She looks ill and sleeps badly, but takes her food.” Death occurred June 18th.

Post-mortem, June 20th, 1870.—“A cicatrix extends from sternum to left axilla; about the centre of the cicatrix and near the usual situation of the mamma, is a

small raw-looking cancerous mass the size of a walnut; in the border of axilla and slightly above the cicatrix is an indurated gland the size of a small hazel-nut.

“Left lung adherent, somewhat congested; immediately under the visceral pleura are three small cancerous nodules. Right lung pushed upwards by a collection of pleuritic fluid, about 20 oz. The diaphragm and thoracic walls studded with cancerous masses, varying in size from a walnut downwards, most of which were softening; some of these were the seat of extravasation of blood. Pleura studded with deposits of cancer. . . . Glands in anterior mediastinum the seat of cancerous infiltration. Some recent lymph in pericardium. Heart weighed $10\frac{1}{2}$ oz., very soft and fatty; liver, $53\frac{1}{4}$ oz., containing a few small cancerous deposits on the upper surface. Uterus contained a polypus.

CASE XXXI.

Chronic Cancer of Breast, fourteen years' duration, at first painless.

Mrs. W——, æt. 60, consulted me in November, 1862, for cancer of the left breast. There was central depression of the gland and retraction of the nipple; the disease had existed already twelve months. There was no pain, the breast was not tender; *a diminution of its size was the first discovered sign of mischief.* The axillary glands were not enlarged.

February, 1863.—The disease had made no progress. The general health much improved (by attention to diet, &c.). Four years afterwards, March, 1868, this note was made—“Has seldom had pain, but if the arm is used pain in the muscles comes on. A month since the patient had difficulty of breathing, and faintness; cannot bear pressure below the ribs. If not careful in putting the feet to the ground, cramp is immediately induced. There are yellowish red *plaques* about the skin over the breast, and some axillary glands are indurated.”

In November, 1872, the patient wrote to me, saying "There is a very large deep hole" (in the breast) "which discharges profusely. . . . I have been feeling very unwell the last fortnight; . . . sometimes the pain is intense. . . . In the morning I feel very faint if I attempt to move in bed." Yet, notwithstanding, in April, 1874, the patient was still alive, but I was informed by letter that she was "getting much worse;" . . . "the arm is excessively hard and swollen, with intense pain, particularly in the hands and fingers." Death did not take place until early in the following year. The disease thus having lasted about fourteen years.

CASE XXXIA.

Chronic Cancer of the Breast, nineteen years' duration.

The following case is an example of extremely chronic cancer under my observation during fifteen years:—

M. Roser, a widow, aged 46, of florid complexion, was admitted under my care as a cancer out-patient in 1863. There was a tumour of the left breast, the nipple buried in a deep sulcus, from the sides of which projected *some semi-transparent globular succulent tubers*; indistinct induration existed along the axillary lymphatics; superficial ulceration occurred from time to time, and she was admitted for short periods as in-patient, during the intervals of her stay in hospital working with her needle. At last she became permanently an in-patient, dying in 1878, that is, fifteen years after first coming under my observation, when already the disease dated back four years.

The *post-mortem* revealed secondary deposits in the lungs. Plate VIII., Fig. 1, gives the drawing of the lung deposit (low power), and Fig. 2 of a section of the breast (higher power). These histological sections setting at rest any doubts entertained—from the anomalous aspect of the tubers—as to the really cancerous nature of the growths.

CASE XXXII.

*Chronic Cancer of Left Breast—Removal by Fell's Process
—Extension of disease to opposite side.*

MARY KEARNEY, æt. 50, admitted out-patient October, 1862. Five years previously the left breast was removed by Dr. Fell's chloride of zinc process, and remained well until Christmas, 1860. "During the past twelve months the right breast has become indurated, and there is retraction of the nipple. She suffers much pain, especially at the change of the weather. At the site of the original operation ulceration has taken place."

As out-patient she continued to attend, and in February, 1863, the following note was made:—"The sore at the seat of the original operation has spread. On the other side—the right side—atrophic changes are taking place." She died in September of that year.

CASE XXXIII.

*Cancer of the Right Breast, commencing eleven years previous
to date of admission as out-patient, December, 1863.*

SUSAN KITE, æt. 47. "Has a tumour of the right breast. Eleven years previously she had noticed a small movable knob the size of a pea; it was painless. Now there is an obscure induration at the axillary border of the gland. Within the last twelve months this has been occasionally very painful. No history of cancer in the family."

January 7th, 1864.—"The axillary glands have become enlarged."—The patient was living in 1866, and she was seen by me on December 13th of that year, the tumour having shrunk.

CASE XXXIV.

*Cancer of the Left Breast, involving Areola—Family
History of Cancer.*

—PELLON, æt. 60, admitted April, 1864. The patient states that she had a lump in the pectoral region from

her birth; but that twenty years since—that is, at the age of 40—it began to swell and became fixed. Her mother, she said, had a cancer exactly like her own, dying at the age of 70. Maternal grandmother died, æt. 78, with cancer. The patient was still living, February, 1870.

CASE XXXV.

Chronic Cancer of the Breast—Brawny Condition of Skin of Chest—Edema of the Arm—Effusion into Pleura—Family History of Cancer.

HARRIET ADAMS, æt. 48. Admitted under my care March 27th, 1869. “Five or six years ago the left breast swelled and became painful. The nipple subsequently became retracted, and the skin broke nine months since. The site of the left breast is occupied by a cluster of tuberculated and ulcerated projections in the skin, the size of split peas and somewhat larger. The nipple is gone; there are enlarged glands in the axilla.” The affected breast was always the larger of the two. In June the arm began to swell, and she died with effusion into the pleura, October 22nd, 1869.

There is a curious circumstance in the family history of this patient. One of her sisters, at the age of 20 years, had a tumour, about the size of a nutmeg, removed from the left breast. Twenty years later a cancer formed in the same breast, which was cut out at the Radcliffe Infirmary, Oxford, in 1846. . . . A paternal aunt died with cancer of the stomach, and a maternal uncle with cancer in the throat.

Post-mortem.—“Body very pale, nearly two inches of fat in the front of the abdomen; occupying the site of the left breast is an extensive shallow ulceration, with thickened hard edges and adherent below, the hard deposit extending four or five lines beyond the actual limit of the sore; there are, besides, some separate hard deposits in the skin of the neighbourhood. There is a brawny condition of nearly the whole skin over the left

side of the chest reaching across the sternum: on cutting into it, it is seen to be two or three lines thick. The tissues about the axilla are all infiltrated with a firm dense deposit, and the arm is very œdematous. The cancer has extended as a very hard, white-looking deposit through all the tissues in front of the left side of chest, but without reaching into the pleura. Forty-five ounces of clear, straw-coloured fluid in left pleural cavity, the lung quite collapsed. Embedded in the lung are three or four pea-like nodules, one of which is white and dimpled on the surface; the others deeply pigmented; the right lung universally adherent and charged with serum; some enlargement of the bronchial glands, which are also deeply pigmented. Liver slightly cirrhotic, and containing some half-dozen umbilicated white firm cancer nodules. Uterus small, smooth, os almost obliterated; attached to each ovary are cysts, on the right ovary one the size of a tennis ball. The Fallopian tube is adherent, and two or three small cysts are contained in the left ovary. Weights of the various organs—heart, 9 oz.; right lung, $17\frac{1}{2}$ oz.; left lung, 7 oz.; liver, 39 oz.; spleen, 4 oz.; right kidney, $3\frac{1}{2}$ oz.; left kidney, 4 oz.”

CASE XXXVI.

Chronic Cancer of the Breast—Bruise of Primary Tumour followed by its rapid increase in size—Tendency to Cyst Formation—Sloughing of part of Tumour—Cicatrization of Ulcer.

ANN COWAN, æt. 73. Admitted out-patient, July 9th, 1860. “Five years previously she noticed a lump, which three years since was accidentally bruised, and rapidly increased from that time. Pain is not great, only now and then severe. Wet weather gives rise to the pain; there is no axillary or cervical glandular enlargement. Its removal advised, but the patient would not consent to operation.”

October 20th, 1860.—“Tumour has increased; it is nodular, and the nodules looking like the protuberant walls of cysts.”

December 31st.—“Tumour enlarging rapidly.”

January 14th, 1861.—“Patient says that itching is her chief discomfort as regards the breast.”

March 18th, 1861.—“A cyst on the surface burst a few days since; some whitish, cheesy matter escaped.”

March 25th.—“Cyst aperture nearly healed; breast is easier.”

September 5th.—“Pain less, tubers increasing; the breast is still movable.”

January 2nd, 1862.—“On the whole, comfortable; little change.”

June 26th.—“Tumour is shrinking. Patient says it has bled, but no ulceration is visible.”

October 16th.—“I carefully examined the patient to-day. No axillary or supra-clavicular enlargement. She appears much as usual.”

December 4th.—“Tumour contracting.”

January 22nd, 1863.—“Patient about the same, tumour contracting in parts; late stormy weather caused great pain.”

[Patient says that she is so sensitive to disagreeable odours that the smoke of a candle snuff once made her miscarry, and that her mother was similarly sensitive, and could not bear flowers in her room.]

March 26th.—“Tumour shrinking. Patient has more pain, but she sleeps well.”

December 8th, 1863.—“There is enlargement of the axillary glands. Patient to be admitted into the Cancer Wards of the hospital.”

State on admission.—“There is a tuberoso enlargement of the right breast. She has been out-patient since July, 1860. The disease commenced nearly eight years before her admission. There appears to be an inclination to the formation of cysts near the surface, which burst and bleed. An axillary gland enlarged; arm is not swollen.”

January 1st, 1864.—“A cyst burst and there was much bleeding.”

January 5th.—“Necrosis of the tumour to about half its thickness took place.”

The patient lived on with little change in the breast—and—

Died, December 8th, 1865.—“There were secondary deposits in the lung, and effusion into the pleural cavity.”

CASE XXXVII.

Chronic Cancer of Breast—Twelve Years' Duration—Acetic Acid injected.

ELIZA WILLIAMS, æt. 54. Admitted May 29, 1866.—“Left breast scirrhus, nipple retracted, enlarged axillary glands, left eye more prominent than the right. Numbness of the left hand. Two years before admission she began to feel pain in the left breast, and the nipple became retracted; the pain in the breast increased.”

On November 9th “the tumour was injected with acetic acid at my request, by the physician himself who recommended its employment in cancer. The pain immediately caused was excessive, and continued more or less severe for some days afterwards.”

November 30th.—“No diminution of the tumour.”

December 22nd.—“Tumour no smaller; it has not again been injected.”

March 22nd, 1867.—“Suffers much pain from a sense of pressure, as though something tight were bound round her. Breast has been slowly increasing in size, and has ulcerated (small yellow ulcerations).”

April 23rd.—“Breast bled a little; is reddened and painful.”

This patient continued to live on in “feeble health” for several years; she very gradually became weaker, and died March 6, 1878, twelve years after her admission.

Post-mortem.—“General appearance, extremely emaciated. Left mammary region is occupied by a hard

nodulated mass bounding a wide and deep sulcus, which extends in a curved direction downwards and outwards from the sternum to the anterior axillary fold. This sulcus is covered for the most part by a thin bluish epithelial layer. The main mass of the tumour bounds this furrow above. It is excessively hard both to the touch and to the knife, cutting like cartilage. The muscular tissue was invaded by the growth, but very little exceeding the area of the mammary gland; a few enlarged and hardened glands occurred in the axilla.

“Pleura covered by small irregular white plaques; no mass in lung.

“Right lung firmly adherent, it had to be removed with the knife; pleural layer changed into a thick scirrhus mass of cartilaginous consistence—with microscopical characters of scirrhus cancer—invading the lung.

“Diaphragm also covered by plaques of white hard cancer. No liver nodule; liver firm. Kidneys atrophied; spleen atrophied.”

CASE XXXVIII.

Cancer of right Breast—Amputation—Immunity from recurrence for over Two Years—Pleurodynia—Extension to opposite Breast—Cerebral symptoms—Tumour of Brain—Under observation Six Years—Total duration of Disease at least Eight Years.

ELEANOR TIBBS was first seen in November, 1863, as out-patient, then æt. 49. She was a domestic servant, single, catamenia regular, but suffered somewhat from dysmenorrhœa. In the summer of 1862 she discovered a lump, the size of a damson, in the upper part of the right breast. The tumour did not increase until the same season of 1863, when, the patient having done hard work, it enlarged so as to have a diameter of about two inches. There were, however, no external appearances nor was any sensation communicated to the touch that would distinguish this tumour from a chronic mammary tumour. No enlarge-

ment of the axillary or of the supra-clavicular lymphatic glands could be detected, and the inconvenience from pain was but slight. The patient was of fair complexion, with very light grey eyes, rather deaf, and complaining of noise in the head.

1864. February—"Tumour believed to be increased in size."

October.—"Tumour softer, and there has been some shooting pain."

I removed the tumour, including the whole of the mammary gland, by the ordinary operation.

1865. August 3rd.—"No trace of local return of disease."

November 23rd.—"A small lump at the inner possible limit of the mammary gland; character doubtful."

1866. May 17th.—"No return of disease."

November 9th.—"Suffering with pleurodynia. Placed under the care of Mr. Moore in the Middlesex Hospital," where she remained some weeks. No operation was carried out.

1868.—Again applying as out-patient, March 12th, it was noted that "the nipple of the left breast excoriates; the lump near the cicatrix of the right side is neither continuously painful nor puckered; it is movable; 'occasionally pricks and shoots.'"

1869. February 4th.—"The nodule at the sternal side of cicatrix is becoming distinct."

April 1st.—"Patient is much wasted, is constantly sick."

April 8th.—"Is better; no longer sick. Belly carefully examined; no tumour discovered."

May 20th.—"Complains of giddiness."

June 24th.—"Sick for two days."

July 1st.—"Limbs ache. Nipple of remaining breast retracted; breast indurated."

Thus end my own notes of the case as out-patient.

Admitted as in-patient, under my care. The following are the in-patient notes:—

“Has twice before been in-patient; four years ago was operated on; there was then a tumour on the upper segment of the right breast. Has lately been troubled with sickness; pain over the side of the head and down the arm; the arm does not swell. Patient is very deaf.

“There is an old cicatrix on the right pectoral region, with cancerous induration of the tissues to its sternal side. The patient is extremely feeble, walks with difficulty, answers such questions as she can hear in a confused mumbling manner.

“The weakness increased; the patient often complained of throbbing in the head, the deafness and indistinctness of speech also increased. She seemed, however, to understand signs, and the tongue was protruded quite straight, with no definite paralysis; the difficulty of walking became continually more marked. In September, there was noticed a central induration of the left breast. At this time the patient appeared almost fatuous, constantly wagging the head, and feebly smiling and mumbling inarticulate sounds when addressed; she died January 7th, 1870.

“No relations known to have suffered from cancer. Father and paternal grandmother were reported to have died of asthma. *Patient, one of a family of fourteen, eleven being still alive.*”

Post-mortem. January, 1870:—“Scirrhus of mamma; old and recent secondary deposits in liver. Body rather emaciated. About one inch external to the ordinary position of nipple is an oblique scar three inches long, running inwards and upwards; its edges are not in the least indurated; a small mass remains, apparently of mammary gland, not connected with edge of cicatrix; this presents microscopically granular matter with large round cells. Axillary glands somewhat enlarged and indurated; on the left side the mammary gland hard and scirrhus, the neighbouring structures not affected. Right lung adherent at one part about three inches posterior to the right mamma, and the surface covered with a layer

of pus; lung-tissue beneath, in a state of grey chronic interstitial induration; this induration involved about one-third of the lung-tissue. Both lungs on their surface were much puckered, and were deeply pigmented. No appearance of cancer either on lung or pleura. Liver thickly studded with cancerous nodules of various sizes, from that of a pea, to that of an apple; some were very hard, while others were beginning to break down in the centre. *The brain was, at its base, the seat of a globular cancerous tumour, the size of a racquet-ball.*" Weight of organs:—heart, $8\frac{1}{4}$ oz.; right lung, 20 oz.; left lung, 13 oz.; liver, 50 oz.; right kidney, $4\frac{3}{4}$ oz.; left kidney, 5 oz.; spleen, 5 oz.

CASE XXXIX.

Chronic Cancer—painless—Death from Cardiac Degeneration.

Mrs. M——, æt. 73; first seen by me 19th September, 1877; had small tumour to the sternal side of the nipple. It had existed between three and four years; the nipple was somewhat enlarged. The patient did not complain of acute pain, nor in fact of pain of any kind in the breast, but suffered much from cranial neuralgia on the right side. No enlarged glands in the axilla.

April 18th, 1878.—The patient reports herself to be in the same condition as in September last. There is a slight depression of the surface a little above the site of the tumour.

October 26th, 1878.—There is no discomfort; the cranial neuralgia has gone.

April 30th, 1880.—The depression of the surface noted in April, 1878, has increased, so as to form a distinct sulcus. There is very little uneasiness, and the axillary glands are not enlarged.

October 18th, 1880.—There is an erythematous superficial thickening at several points around the centre of the breast, and the same appearance on the chest below the mammary region. The patient complains much of

dyspnœa, which I could not discover to be other than cardiac. There was no indication of hydrothorax, but symptoms of aortic degeneration and feeble heart. During a visit to the country during July and August the patient suffered much from rheumatic (?) pain in the shoulder, scapular region, and back, and experienced great muscular weakness.

November 10th.—I was informed that the patient died November 8th; from increasing feebleness and cardiac failure. This patient's father died æt. 80, her mother æt. 84.

CASE XL.

Chronic Cancer, with family history of Nervous Disease.

ANN IRELAND, aged 66, admitted April, 1862. Twenty years ago first noticed a lump in the right breast, the size of a pea, which enlarged very gradually until within the last few weeks, when it rapidly increased. No swelling of the axillary or cervical glands. Has suffered from rheumatism. When 50 years of age, had epileptic fits, which troubled her during two years.

In June, the axillary glands became increased in size; in January, 1863, the breast was distinctly shrinking. In July, 1864, the patient informed me that she had a sister dying of paralysis, and in September, 1864, one of her daughters had died suddenly from apoplexy.

CASE XLI.

Cancer of Breast—Family History of Longevity.

DIANA CHAPMAN, æt. 72, admitted November, 1862, with cancer of the right breast, which had existed two years. The patient is an exceedingly nervous woman. Mother died æt. 84. Father was killed. Maternal grandfather and grandmother lived to be 90 years old. No history obtainable of the paternal grandfather or grandmother. Two brothers died æt. 70 and upwards. One brother living between 60 and 70. Three sisters alive and healthy.

CASE XLII.

Cancer of the Breast, Patient's Sister having Fatty Tumour.

HARRIET MANDY, æt. 78, admitted December, 1862. Two semi-spherical nodules of cancer at the outside of the right breast, discovered fifteen months since. Never painful at any time. No enlargement of the axillary glands. The arm does not swell. This patient has a sister æt. 66, who has a fatty tumour at the edge of the axilla on the right side, of two years' standing.

CASE XLIII.

Cancer of the right Breast at an advanced Age—Family History of Longevity.

MARY BAKER, aged 85, admitted February, 1862. Cancer affecting the centre of the breast, inactive; this had existed two or three years. The patient's father and mother both lived to the age of 80 years.

CASE XLIV.

Cancer of Breast—Family History of Phthisis and Apoplexy.

ELIZA HENDY, aged 59, admitted June, 1861; cancer of the breast. Mother died of apoplexy, aged 69. Two sisters died of consumption. Two brothers died of consumption.

CASE XLV.

Cancer of Breast—Family History of Cancer and Tumour.

—SHELDRAKE, aged 50, had been under the care of Dr. Barford, of Munster Street. "Induration of the whole breast. Admitted April, 1860, died August the same year." She had two sisters who died of cancer of the breast, and had one sister living, aged 60, with a tumour of the belly.

CASE XLVI.

Cancer of Breast—Goitre—Family History of Cancer and Ovarian Disease.

HANNAH PHIPPS, aged 48, admitted June, 1861. "Has cancer of the right breast, and a small hard goitre. The cancer has existed two and a-half years, but no alteration has taken place in the goitre since the development of the cancer. Her father living, aged 74, at that date; mother died with dropsy, aged 60. Maternal aunt had cancer of the breast. A paternal grand-aunt had cancer of the breast. A first cousin died of cancer of the womb. One sister died of ovarian disease."

CASE XLVII.

Cancer of Breast—Family History of Longevity.

ANN BÜRCK, aged 61, admitted May, 1862. "Central cancer of the left breast. Always healthy, one of twelve children. Father died aged 88, mother aged 84."

CASE XLVIII.

Infiltrating Cancer of the Breast—Family History of Phthisis.

FANNY BUCKLAND, aged 49, admitted October, 1862. General infiltration of the breast, with shining tuberculations; painful, rapid increase during the past six months. When first discovered, the lump was only of the size of a hazel nut. The father died of consumption æt 47, and the mother died of consumption æt 33.

CASE XLIX.

Primary Cancer of the Axillary Glands.

MARY WEBB, aged 53, admitted August, 1861. "A large indurated purple mass, reaching from the pectoralis to the latissimus dorsi. There is no nodule to be discovered in the breast, but there is generally fulness

compared with the other side." She died in hospital, November, 1861. *Post-mortem*.—"Cancer of the liver and abdominal lymphatics; right lung firmly adherent; pneumonia."

CASE L.

Cancer following Tumour of Breast at the age of 23 years, removed after eight years' duration.

ANN STEWART, aged 36, admitted out-patient, January, 1862. Cancer of the breast. "At the age of 23 years had a tumour of the breast, which, after eight years, was operated on by Mr. Ritchie, of Team, Staffordshire—that is to say, five and a-half years before her applying at the Middlesex Hospital. She had five children; two of them were born after the operation. She states that the breast was not more painful while pregnant. On admission, there was an indurated mass above the cicatrix towards the axilla, and some induration in the cicatrix itself. She was admitted in-patient, and was operated on by Mr. De Morgan, February, 1862.

CASE LI.

Extensive ulceration from Cancer of the Breast without implication of Axillary Glands—Absence of Pleuritic Effusion—Costal Pleura thickened at part corresponding to the external sore.

A *Post-mortem*.—"HARRIETT JENKINS, æt. 59, April 13th, 1876.—A superficially extensive ulceration destroying the textures over the greater part of the left side of the chest-wall, extending laterally to the fold of the latissimus dorsi, anteriorly reaching upwards to the first intercostal space, and downwards to the sixth intercostal space. The depth of the ulceration varied from within outwards; centrally it had exposed the fibres of the pectoralis and serratus, on which were one or two isolated masses of cancer. No enlarged glands in the axilla or elsewhere. Thorax: no fluid in either pleural cavity; on

the left side a patch of the costal pleura corresponding to the external ulceration was thickened, opaque, and white; elsewhere the pleura was transparent and glistening. Both lungs emphysematous. Ascending aorta thickly studded with atheromatous plates. Liver congested, mottled, and fatty. Uterus contained a small pea-like fibroid; ovaries healthy.

Weights: heart, 13 oz.; right lung, 19 oz.; left lung, 14 oz.; liver, 53 oz."

CASE LII.

Cancer of the Male Breast.

Cancer of the male breast has, of course, some of the general appearances of cancer of the female breast. I have had to treat a small number of cases only, and these in old men. Of two, one was æt. 75, and the other æt. 80. The cancerous disease did not apparently affect the general health, the first patient complaining only that he, of late, was not quite so able as usual to take his habitual seven or eight-mile walks. But there have been in the Middlesex Hospital cancers of the breast in much younger men. One case was under the care of Mr. Lawson. The patient was 41 years of age, and, as some blood-stained discharge occurred from the nipple, apparently the glandular tissue was the earliest affected.

As far as my observation goes, there is more fixation, and the infiltration of the skin is earlier than in females. I have, however, met with cases of cancer in the female breast resembling in these respects cancer in the male.

Mr. Lawson's Case of Cancer of the Male Breast.

"June 25th. I. B——, æt. 41, carpenter. Under the care of Mr. Lawson. The first symptom noticed, between three and four years before admission, was a slight bleeding from the nipple, just sufficient to stain the shirt, and appearing once or twice a week. Three or four months

after, he found a small substance, not larger than a pea, below the nipple, firm to the touch, more prominent at some times than at others, the nipple remaining healthy. When the tumour enlarged, the bleeding from the nipple ceased; the growth further increasing, the skin became involved and discoloured. Ultimately, it sloughed, and ulceration gradually extended, destroying the nipple. There was little pain. No history of cancer in family beyond the fact that a paternal aunt died of cancer in the breast." The tumour was removed by Mr. Lawson.

A recurrence of the disease took place, and was again operated on. At this second operation the pectoral muscular tissue and axillary glands were removed. There was the same change in the muscular tissue as shown on Plate X., Fig. 1.

CASE LIII.

Cancer beginning as a Scaly Patch—Repeated treatment by Chloride of Zinc Paste.

WILLIAM PARKER, aged 62; was admitted out-patient September, 1861, with cancer over the sternum, in the form of a semi-globular ulcerated tumour. Ten years previously, it commenced as a small scaly patch, which, as the patient expressed it, used to "shell off dry." After two or three years it gradually enlarged and became moist, and remained so six or seven years. He was treated at St. George's Hospital, and the sore healed. After twelve months it broke out again, and he was treated by a specialist, with chloride of zinc paste; after six weeks it healed again. A recurrence took place in eighteen months, when the chloride of zinc treatment was repeated, cicatrization being again obtained. It remained healed for two years, but since the last cicatrization it began to grow prominent. There was no family history of cancer. Father died aged 72; mother died aged 72.



PLATE I.

FIG. 1.—Section of Cancer of Breast. The small cell element—
lymphoid cells or corpuscles—in excessive abundance.

FIG. 2.—Section of Cancer of Breast. The epithelioid cells predominant,
lymphoid cells absent, the stroma being indistinctly alveolar.

PLATE I.

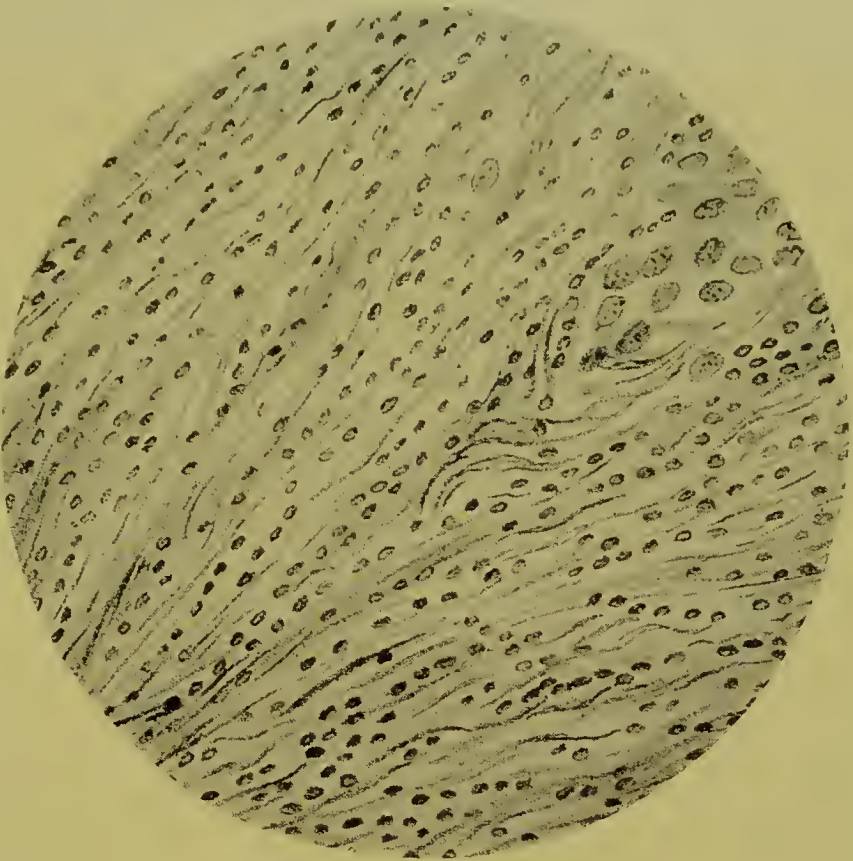


FIG. 1

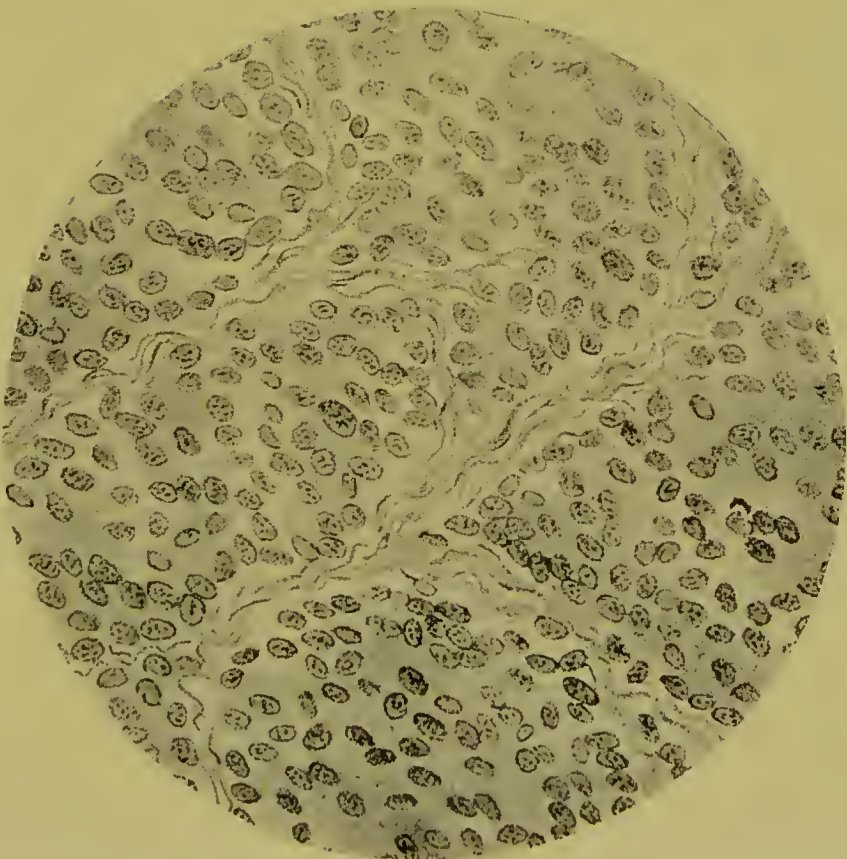


FIG. 2

PLATE II.

FIG. 1.—Section of popliteal lymphatic gland. (Sarcoma of fibula.) The cells are more or less uniform in size and have no definite arrangement. In this case the patient died from secondary deposit in the thorax.

FIG. 2.—Section of lymphoma presenting solely lymphoid cells or corpuscles.

PLATE II.

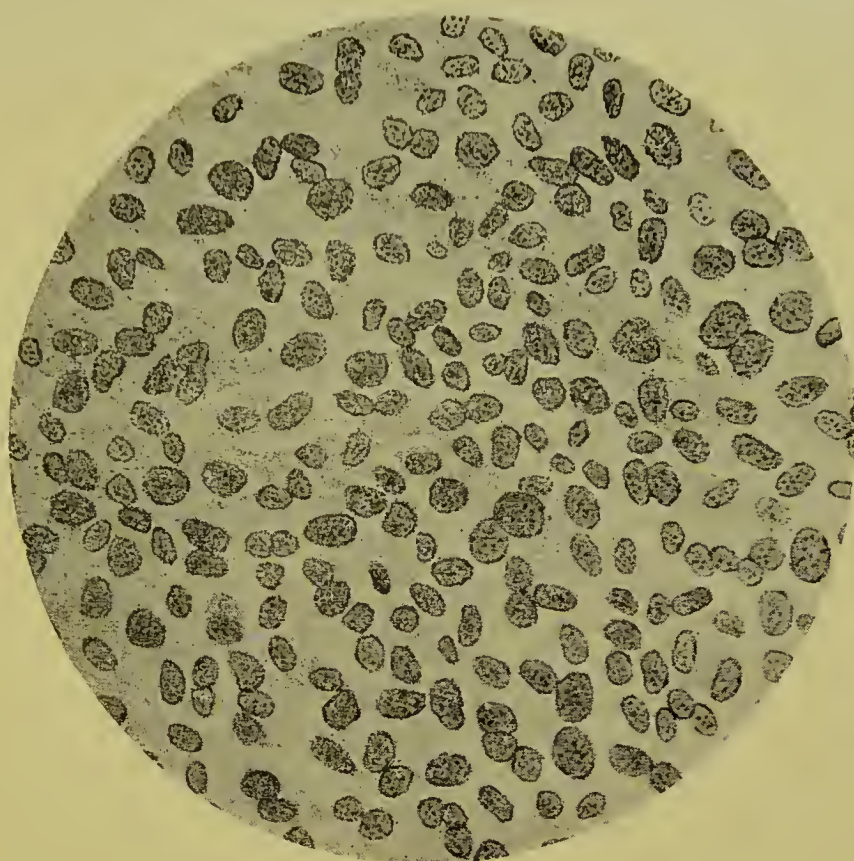


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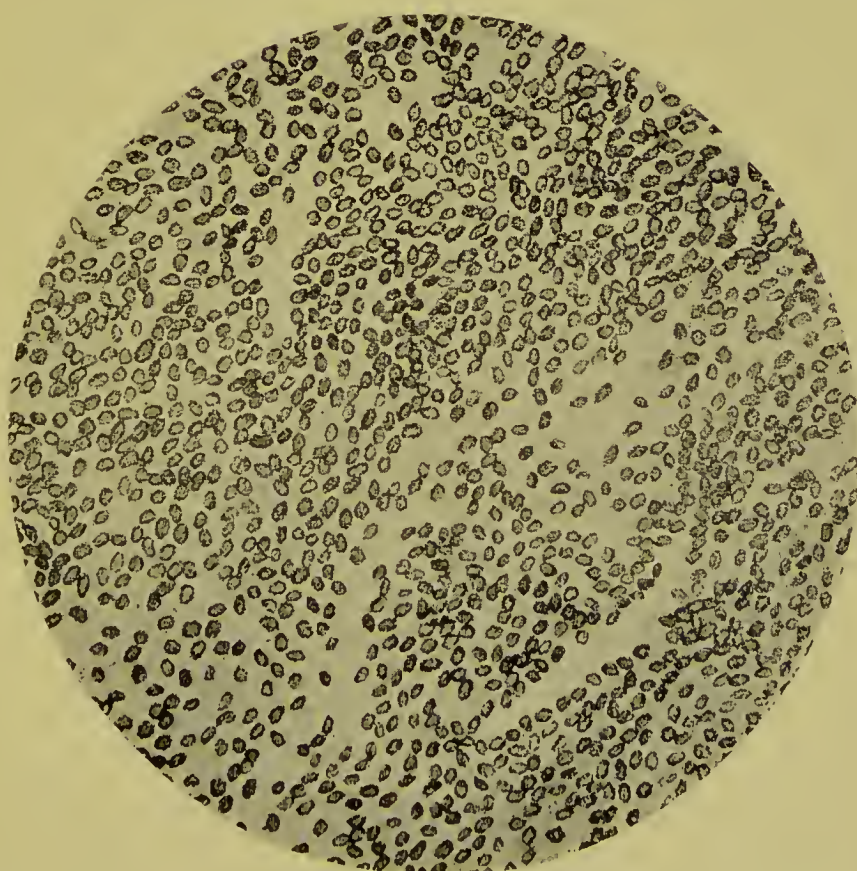


FIG. 2

PLATE III.

FIG. 1.—Section of cancerous lymphatic gland. The epithelioid cells in groups surrounded by stroma. The lymphoid cells in great abundance.

FIG. 2.—Section of an isolated nodule in the neighbourhood of a cicatrix after an operation for removal of the breast some years before the removal of the nodule. The arrangement of epithelioid cells. Stroma and lymphoid cells being precisely similar to the arrangement in the axillary lymphatic gland. (Fig. 1.)

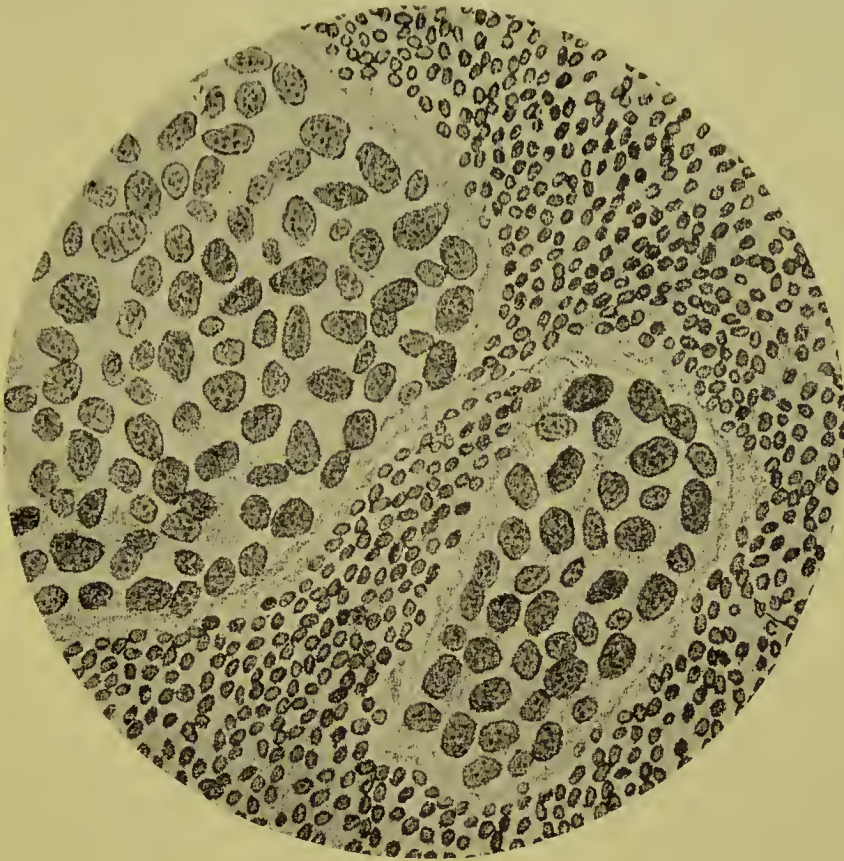


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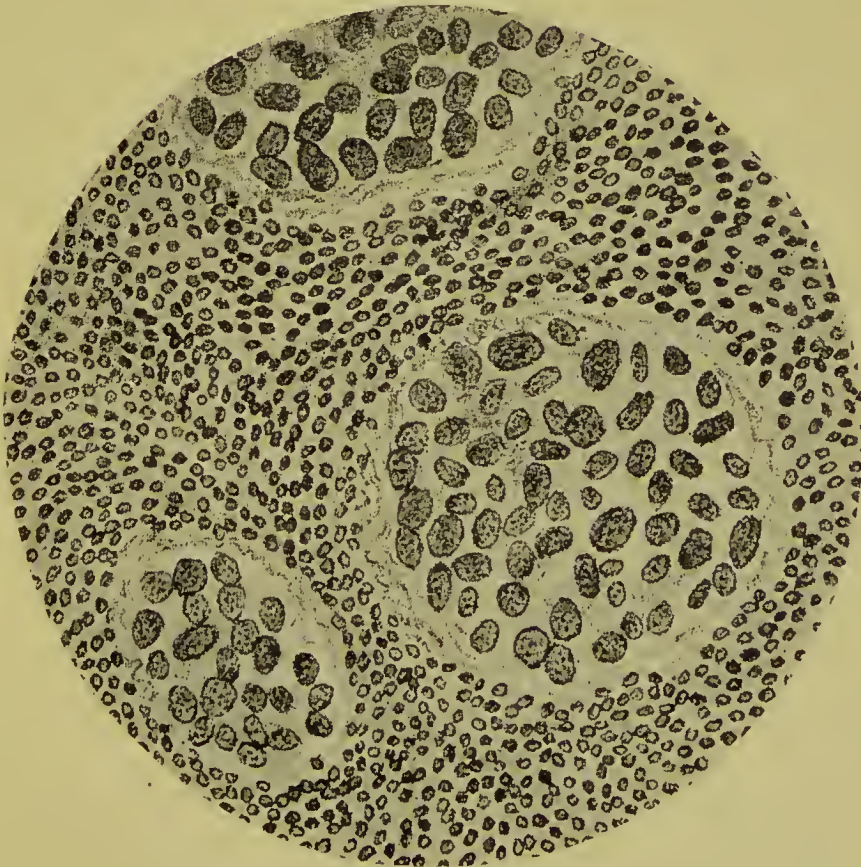


FIG. 2

PLATE IV.

Three sections from different parts of the same specimen of Cancer
of Breast.

FIG. 1.—The epithelioid cells aggregated and apart from the alveolar wall, the lymphoid cells distributed in or infesting the stroma.

FIG. 2.—The epithelioid cells alone appear to be invading the fibrillary tissue of the breast.

FIG. 3.—The epithelioid cells within alveoli and shewing tendency to withdraw from the alveolar wall. The lymphoid cells plentiful in the stroma.

PLATE IV.

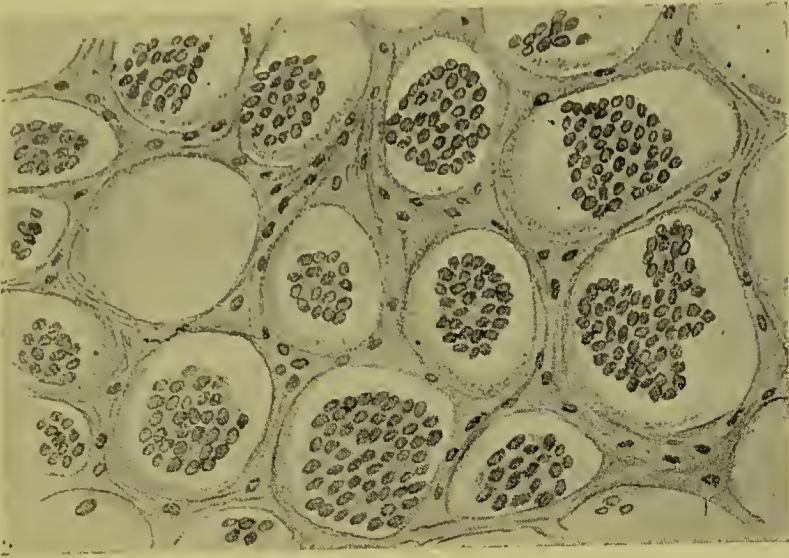


FIG. 1

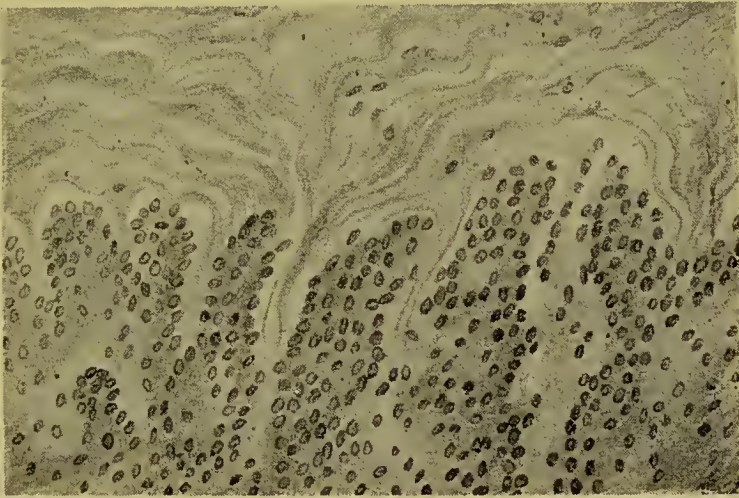


FIG. 2

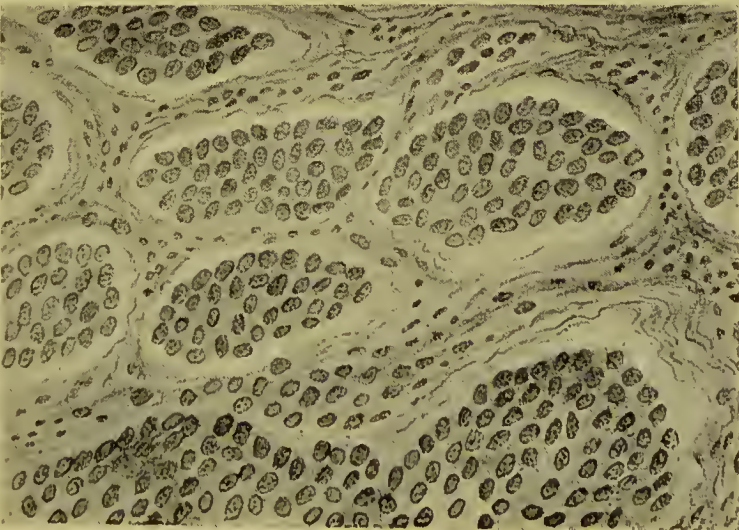


FIG. 3

PLATE V.

FIG. 1.—Section of Cancer of Breast removed by Mr. Lawson. The epithelioid cells are in large masses, surrounded by stroma, which is loaded with lymphoid cells.

FIG. 2.—Section of Cancer of Breast removed by Mr. Morris. The tumour was as little fixed as a common adenoma. The breast was large from the quantity of adventitious adipose tissue. The epithelioid cells are non-coherent and some have fallen out in the preparation of the specimen, leaving the alveoli empty, as seen on the right of the drawing. The stroma and fibrillary tissue are, as in Fig. 1, crowded with lymphoid cells or corpuscles.

PLATE V.



FIG. 2



FIG. 1

PLATE VI.

Section of Cancer of Breast. The lymphoid cells are arranged in groups ; this illustrates the diversity of alveolar grouping described by Sir James Paget. Some of the large cells are disposed in linear series ; others, coat spaces, as in tubular cancer.

PLATE VI.

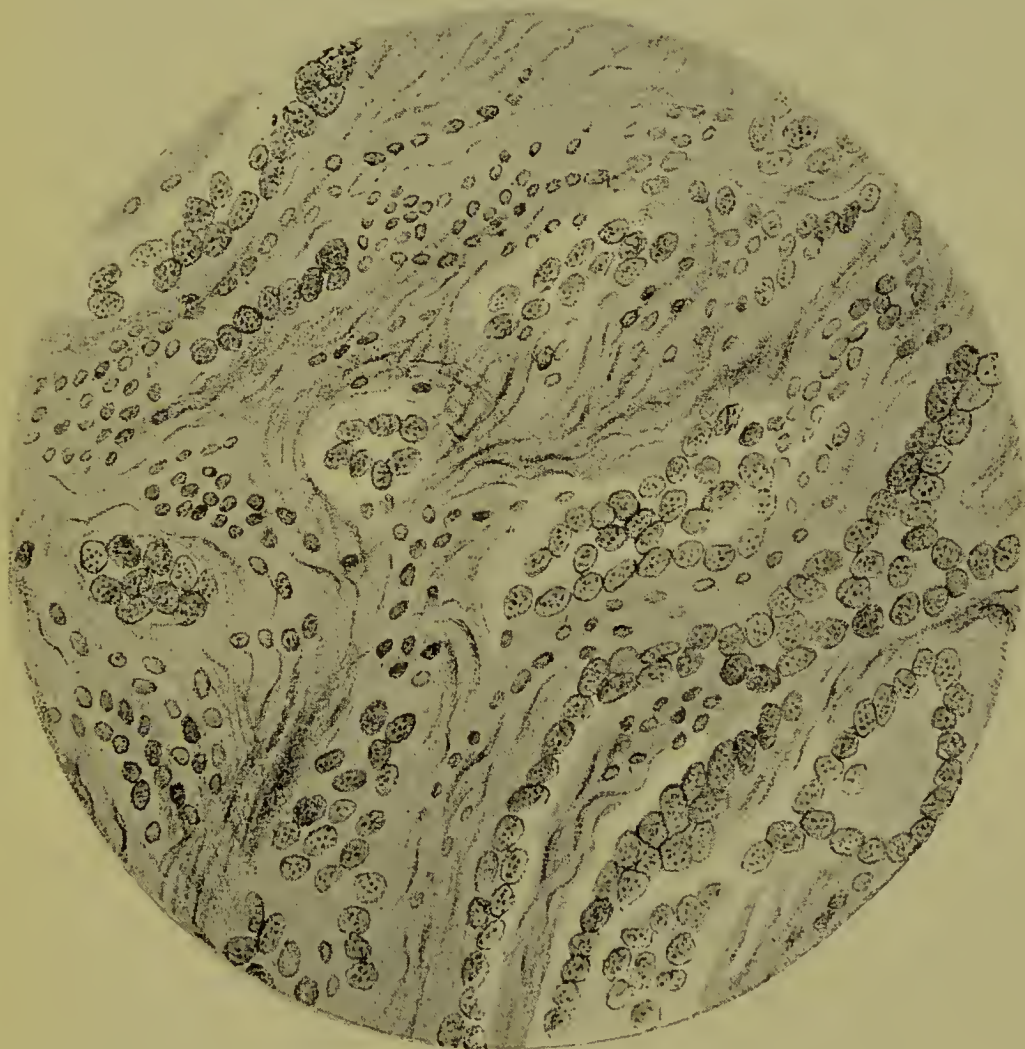


PLATE VII.

The lymphoid cells are arranged in linear series following the lines of the connective tissue or stroma. Some groups of epithelioid cells occupy parts of the field, and appear non-coherent.

PLATE VII.

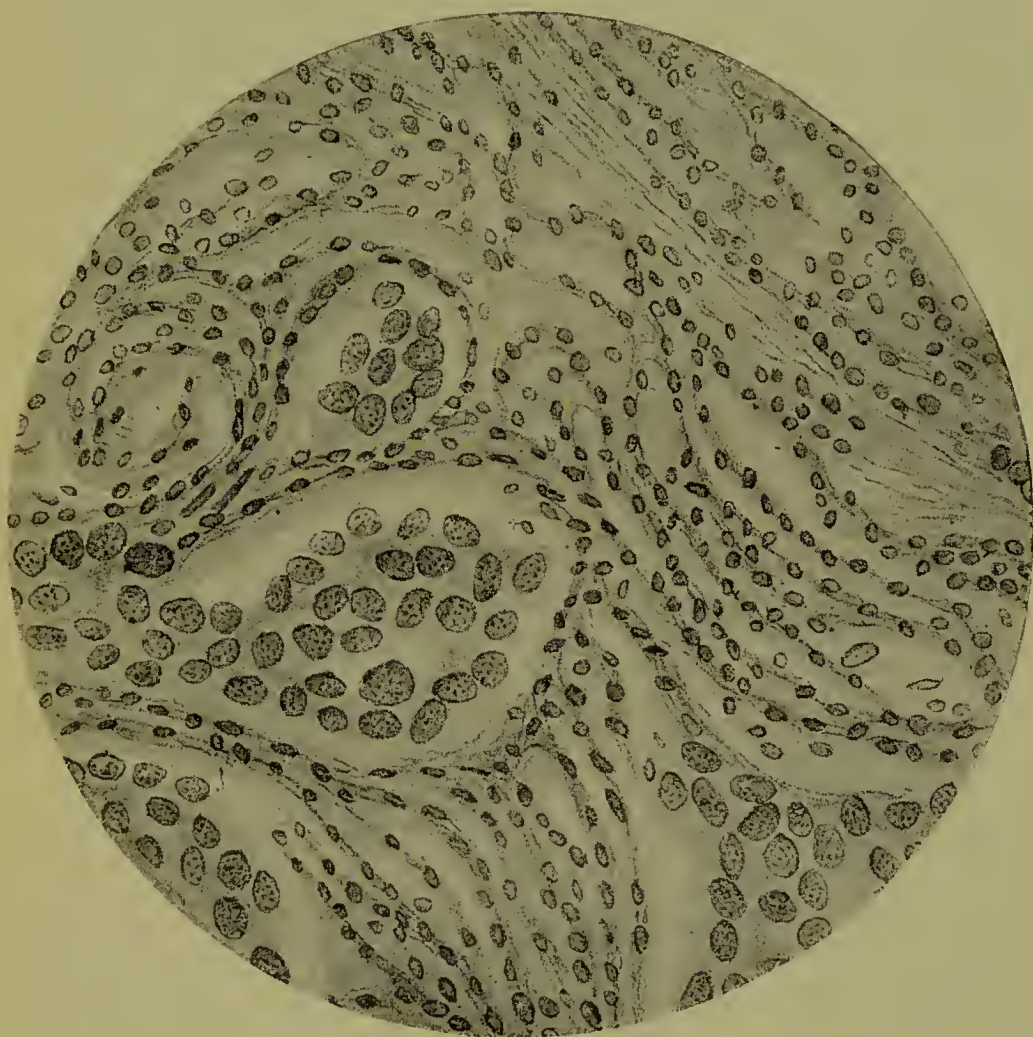


PLATE VIII.

FIG. 1.—Section of Cancer of the Lung secondary to Cancer of the Breast of **nineteen** years' duration.

FIG. 2.—Section of the Breast of the same case, epithelioid cells in large groups, the stroma well marked, being free of lymphoid cells.

PLATE VIII.

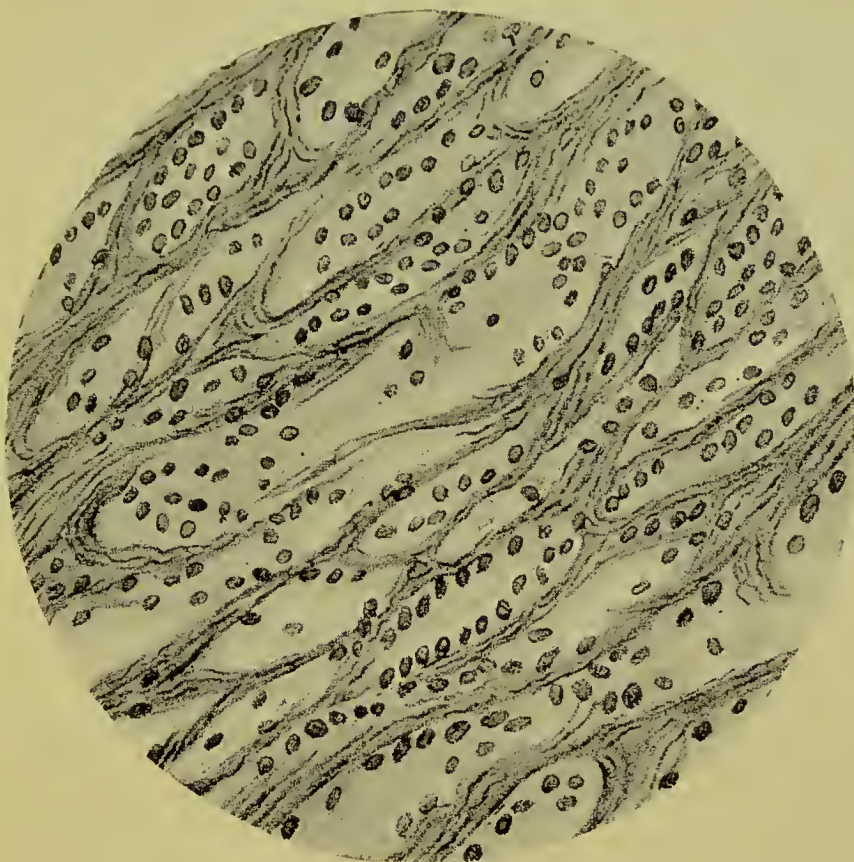


FIG. 1



FIG. 2

PLATE IX.

FIG. 1.—Muscular tissue invaded by lymphoid cells.

FIG. 2.—Adipose tissue permeated with lymphoid cells.

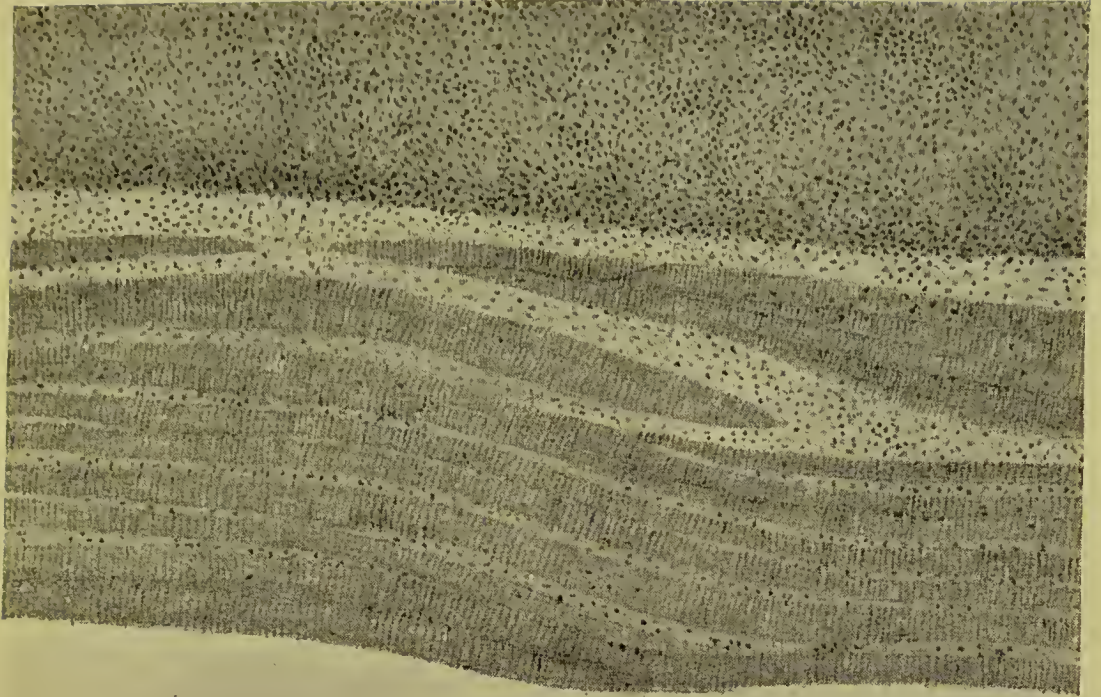


FIG. 1

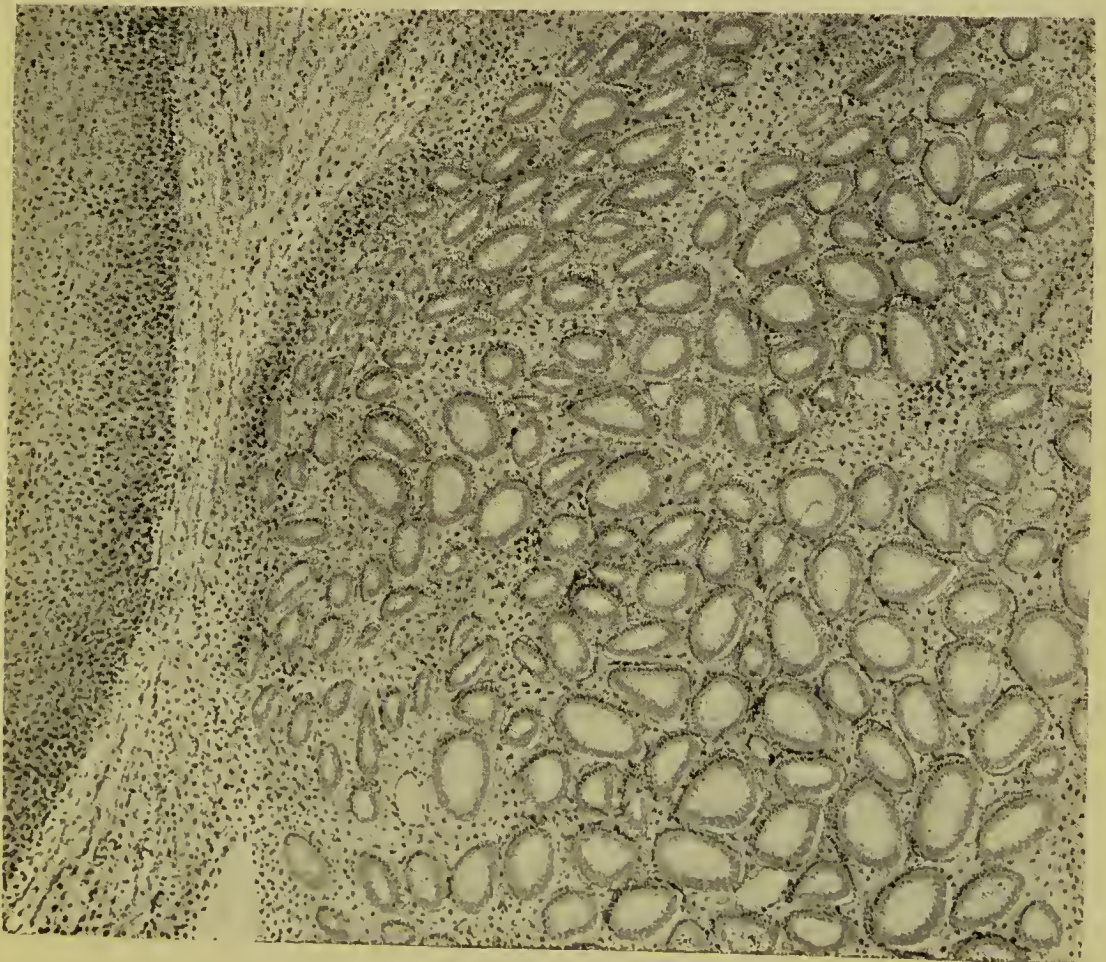


FIG. 2

PLATE X.

FIG. 1.—Section of Cancer of the Breast, of **seven** years' duration.

FIG. 2.—Section of Secondary Nodule in the Liver.

PLATE X.

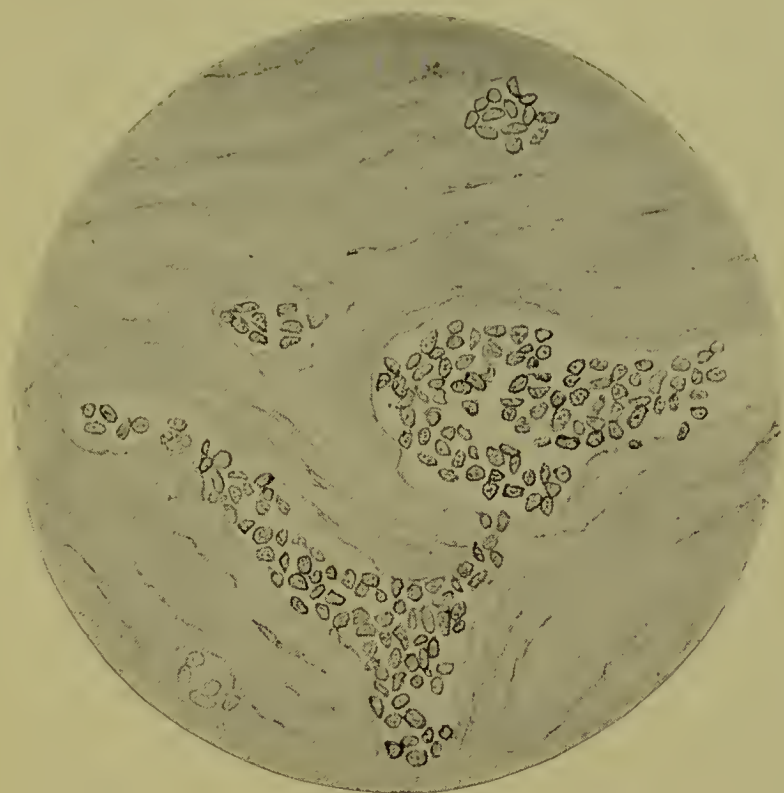


FIG. 1

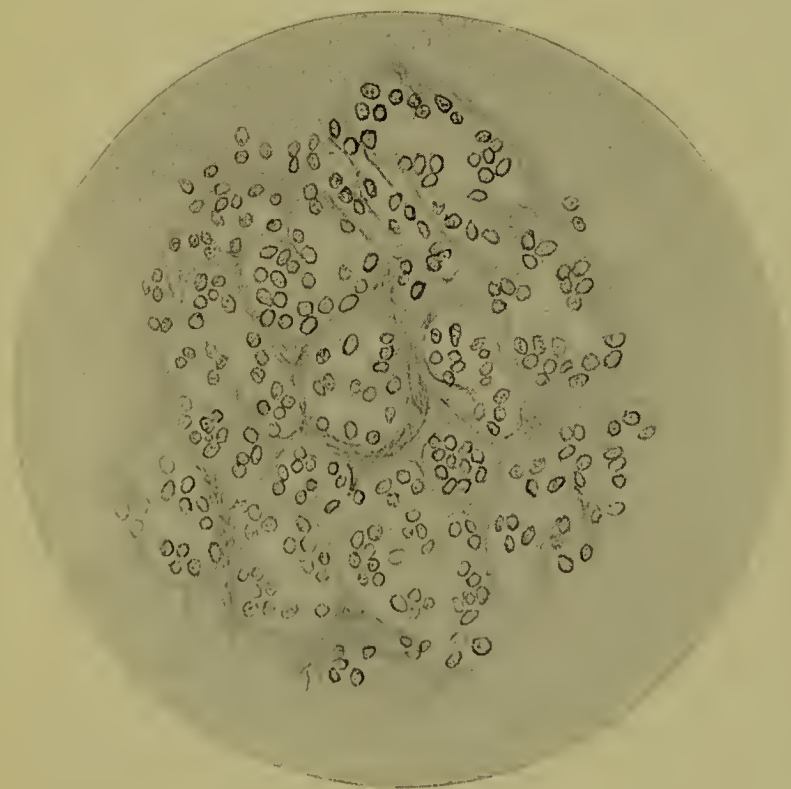


FIG. 2

PLATE XI.

FIG. 1.—Section of the same Breast as in Plate X, from a soft part.
Viewed with low power (Hart, oc. 3 : obj. 4).

FIG. 2.—The same viewed with higher power (oc. 3, obj. 7), the inter-alveolar tissue occupied by lymphoid cells.

PLATE XI.

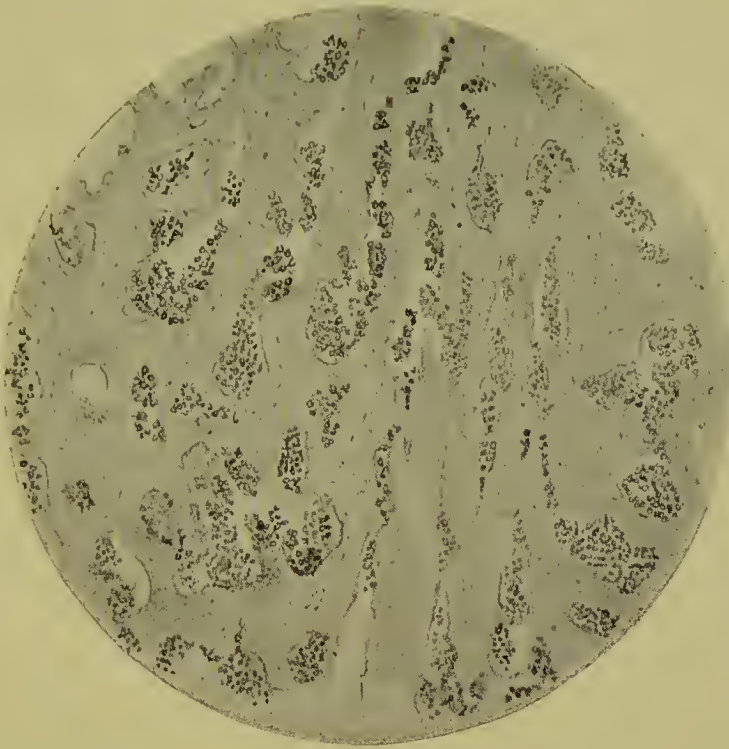


FIG. 1

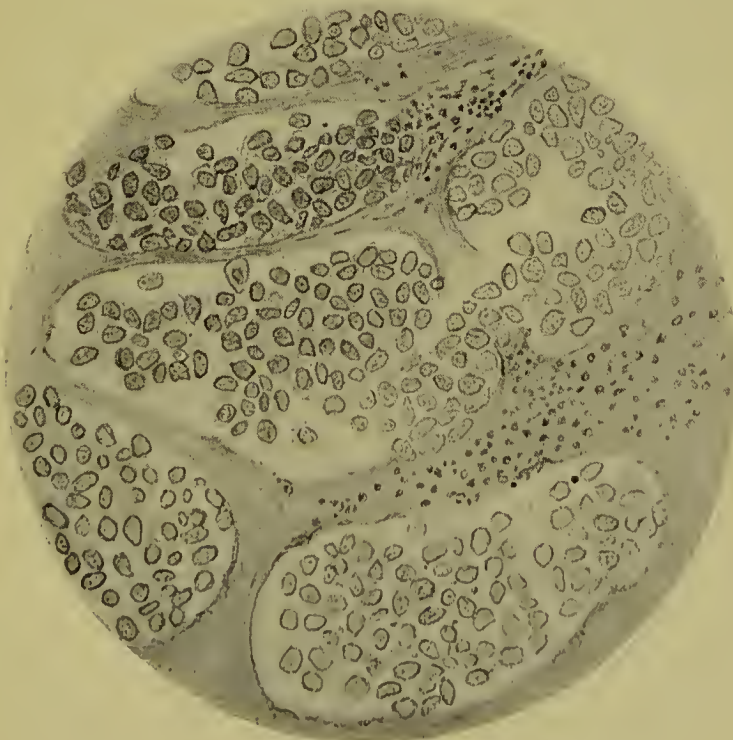


FIG. 2

A PAGE IN THE HISTORY OF OVARİOTOMY IN LONDON.

BY

THOMAS WILLIAM NUNN, F.R.C.S.

Consulting Surgeon to the Middlesex Hospital.

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